



A REPORT FOR OUR STAKEHOLDERS



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ABOUT THIS REPORT

Welcome to the 2018 SAPREF Sustainability Report. This is our primary report to our various stakeholders and provides an overview of the material sustainability aspects of our business.

Scope of the Report

The Report covers the operating period 1 January to 31 December 2018 and focuses predominantly on the refinery's operations at Prospecton and our storage facilities at the harbour. The Report does not cover the entire supply chain or outsourced operations.

Global Reporting Indicators (GRI)

This is the 18th report produced for our stakeholders and we once again report in accordance with selected Global Reporting Indicators (GRI).

Independent Assurance Report

The authenticity and accuracy of the Report's content has been assured through a review by the internal audit team.

To this end, the information that has been verified is indicated by the ✓ symbol after certain data and statements, demonstrating that the information has been verified by the auditors.



Internal Auditor's Statement

With the mandate of the Managing Director, the Chief Internal Auditor, who manages the business risk and assurance portfolio of the organisation, reviewed the 2018 Sustainability Report.

Work Performed

The following work was carried out for the reported information that was selected for verification:

- Evaluate the systems, processes and controls used for recording and reporting the information;
- Review content and supporting documents and where required request additional information;
- Verify calculations and statistics provided;
- Conduct interviews to confirm stated actions and activities.

Conclusion

The preparation and content of the 2018 Sustainability Report is the responsibility of the management of SAPREF. The internal auditor's responsibility is to provide assurance that the Report is free from material misstatement. The internal auditor carried out this responsibility in an independent and objective manner with due care and professional competence. Based on the work performed and the evidence obtained, all statements and performance related data marked with the ✓ symbol throughout the Report have been verified and supported by appropriate evidence.

In performing the review of the Sustainability Report, no evidence has emerged to indicate that the statements and performance related data in the Report are inaccurate or false in any material respect.

Roshnee Sewraj CA(SA)
Chief Internal Auditor
SAPREF



MANAGING DIRECTOR'S MESSAGE

It is my pleasure to introduce to you the Sustainability Report for 2018.

This report provides an overview of the work that has taken place at our refinery in support of our Vision of being the leading refinery in South Africa. Our efforts are driven via Vision 2022, through the contributions of our people and through the support of our shareholders.

In 2018 we spent a considerable amount of time deepening our focus on Vision 2022 and its three anchors of Growing our People, Safe Reliable Operation and Growing Margin. Our mission critical activities are pinned on these three anchors. In order to run the refinery in a sustainable way against the challenges that we face, we need skilled people. Our culture has always been to "grow our own", hence our focus on skills development. To this end in 2018 we recruited a total of 175 young people into our various skills programs. We used the learner recruitment process to progress our broader diversity and inclusion journey by increasing the number of females taken into the various refinery programs to 70% of the intake. For the first time the number of females exceeded the number of males into our learnership program. Our skills development programs are recognised by the Department of Higher Education and are supported by the Chemical Industries Education & Training Authority.

We invested in technical competence development of our staff with a major focus on ensuring our production and maintenance capacity building. We started an internship programs for maintenance apprentices who have been successfully trade tested and upskilled our artisans as well as our inspectors. We continued to strengthen our pipeline when we welcomed three graduate engineers who we have

supported since grade 10, in line with the stated philosophy of growing our own. We also had 30 students in various stages of engineering studies at university.

We continued our investment in continuing staff education through our Employee Study Assistance Program. We are proud of our employees who graduate after having been funded through this program. We continued to invest in leadership development through the Evolve program and to support leaders that underwent the program in previous years through the Evolve Advanced program. In February we hosted our employee families during two of our SAPREF Family Days. This gave family members an opportunity to visit the refinery and understand its operations. The same opportunity was awarded to members of the media, high school learners and learners from institutions of higher learning in October. In July, learners who attended the Department of Energy's Learner Focus Week were also afforded the same opportunity with the aim of exposing them to careers within a refinery environment.

We have always been committed to being good neighbours to our surrounding communities. This we do through our proactive, ongoing engagements with the Community Liaison Forum, various community formations and officials from all three tiers of government. This is coupled with community projects that are informed by these engagements. In 2018 we married our passion for the community with our engagements with local business forums as part of our enterprise development initiatives. Our 20th state of the art science laboratory at Mafumbuka High School in Umlazi was built by emerging business from our fence line communities which meant that we were able to provide a lab for the learners and a business opportunity for the emerging businesses.

Safety remains our number one priority. Our Behavioural Based Safety (BBS) program celebrated its 5th year of focussing on affecting behaviours for positive impact. As safety is everyone's responsibility we continue to train BBS observers to ensure that we are our brother's keepers. We commemorated the tragic events of 17 April 2015 through our Safety Day. The activities on this day reinforced our commitment to ensuring everyone goes home safely and reaffirmed our commitment to a Safe, Reliable Operation.

We look forward to 2019. This will be a Turnaround year with a number of projects to be completed. We aim to deliver on our plans and continue being a partner of choice to our employees, shareholders and all stakeholders.



ABOUT SAPREF REFINERY

Our Core Business

- SAPREF is the largest crude oil refinery in sub-Saharan Africa with a refining capacity of 8.5 million tons a year. The refinery is a joint venture between Shell SA Refining and BP Southern Africa.
- The Refinery has been in operation for 54 years with over 700 employees.
- We manufacture a variety of petroleum products in different grades, including petrol, diesel, paraffin, aviation fuel, liquid petroleum gas, base oil, solvents and marine fuel oil.
- Situated in Prospecton, it is home to some of South Africa's top petrochemical professionals.
- SAPREF's facilities are of national strategic importance and the site is therefore covered under the National Key Point Act.
- In 2018 SAPREF was a level 3 BBBEE contributor.
- It is ISO 9001 and ISO 14001 certified.

Our Vision ✓

To be the leading refinery in South Africa and be competitively placed in South East Asia groupings. We will do so by conducting our business in a safe and reliable manner, being a partner of choice to our employees, shareholders and external stakeholders.

Our Code of Conduct ✓

The SAPREF statement of General Business Principles and Code of Conduct outlines the behaviours and core values that all employees, service providers and suppliers are expected to adhere to. In 2018, the SAPREF Business Ethics Committee continued to share information on the Code of Conduct. One of the major campaigns undertaken was creating awareness of the Gifts and Entertainment policy. SAPREF is

committed to a zero-tolerance approach towards unethical behaviour and maintains an anonymous ethics reporting facility to enable the company to identify and correct practices that are contrary to our values. This service is administered independently of SAPREF by Deloitte Tip-offs Anonymous™ thus ensuring that the identity of any person reporting unethical behaviour remains confidential.

Our Core Values ✓

SAPREF's Values as listed below, underpins our ways of working.



SAFETY

To us, safety is paramount. We demonstrate this by owning, complying and intervening.



RESPECT

We protect and preserve the inherent dignity of every person and we have difficult conversations without crushing one another.



TEAMWORK

We work as teams, we build strong teams and we assist one another to succeed.



RESPONSIBILITY

We fully own our work, but we also own the overall success of SAPREF. We also own our individual growth and development.



HONESTY AND INTEGRITY

We adhere to SAPREF's rules and regulations and we conduct ourselves with the highest ethical standards.

Tip-offs Anonymous Contact Details:

Toll Free Number: 0800 20 44 09

Free Fax: 0800 00 77 88

SMS - 32840

Free Post: KZN 138, Umhlanga Rocks, 4320

Email: sapref@tip-offs.com

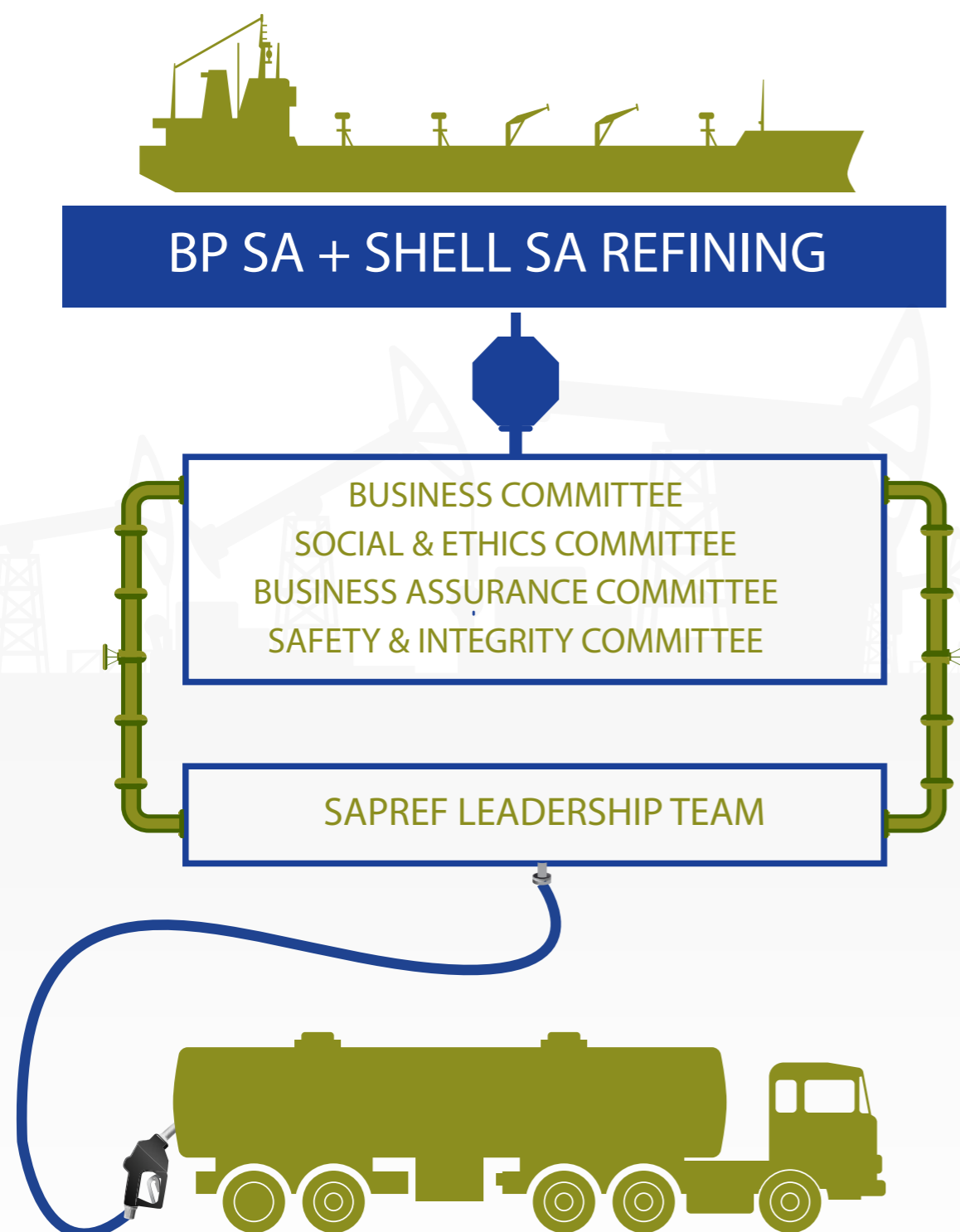
Website: www.tip-offs.com

SAPREF ORGANISATIONAL STRUCTURE

SAPREF Board and Committee Structure ✓

The SAPREF Board processes are organised to oversee the identification and management of economic, environmental, safety and social risks and opportunities.

A formal broad-based risk management process is reviewed regularly. Shareholders provide direction to the board through board sub-committees as indicated in this structure.



SAPREF LEADERSHIP TEAM ✓

Headed by Ton Wielers, SAPREF's Managing Director, this is SAPREF's leadership team.



Ton Wielers
Managing Director



Ningi Khumalo
Head of Finance



John Van Belkum
Production



Lindiwe Khuzwayo
Human Resources



Chris Kalaba
Engineering



Rodney Youldon
Commercial



Ricardo Valbuena
Maintenance



Mbulelo Yokwe
HSSE



Rutger Van der Kloes
Turnaround Safety
Management



Albert Mabaso
Maintenance Competence
Development



Colin Muthusami
Finance TA & Proj



Siva Govender
Technology

ECONOMIC CONTRIBUTION

SAPREF makes substantial contributions towards the local economy. This is highlighted in the figures below:



Broad-based Black Economic Empowerment (B-BBEE)

In 2018, we were verified and attained a Level 3 BBEE status. The table below indicate the scores achieved for each of the

ELEMENT	WEIGHTING	BONUS POINTS	ACHIEVED
Ownership	25	0	25
Management Control	19	0	8.26
Skills Development	20	5	11.64
Enterprise and Supplier Development	40	4	41.64
Socio Economic Development	5	0	5
TOTAL	109	9	91.54

REFINERY PERFORMANCE

The improvement journey continued in 2018 for SAPREF, where the primary focus was to embed the three anchors, Grow Our People; Safe, Reliable Operations and Grow Our Margin.

SAPREF has a design capacity to process up to 180 000 barrels of crude oil per day (or 24 500 to 26 000 tonnes per day) depending on the type of crude oil processed. In 2018, 6.52 million tonnes of crude were processed, producing approximately 24% marine fuel oil and specialties, 28% petrol and 41% diesel and jet fuel. ✓

The following planned shutdowns were executed in the year:

- HDS 2 and HDS 1B had catalyst changeout in March and June respectively. HDS 2 had a second catalyst changeout in October.
- Visbreaker had its annual maintenance in May, overlapping into June.

Unplanned shutdowns

The following were the most noteworthy unplanned

shutdowns during 2018: ✓

- In the year there were several unplanned unit outages arising from external power supply interruptions from the Municipality.
- There was a short stop for a few days on the FCCU unit in August for compressor repairs.
- Our Alkylation unit was shutdown in November for several weeks to address operational performance.

Single Buoy Mooring (SBM)

The SBM underwent its annual planned shutdown in May; the work was executed safely.

The overall Operational Availability and Refinery utilization were below target versus the annual Business plan targets for 2018.

SAPREF processed approximately 54% African origin crudes in 2018. ✓



STAKEHOLDER ENGAGEMENT

During the year, SAPREF continued to engage with various key stakeholder groups including local communities, neighboring schools, media, community organisations, representatives of different levels of Government, industry stakeholders, eThekweni municipality and business organisations.

Our engagements took a step further; as we invited the community to tour the refinery and obtain better understanding of the refinery operations during the refinery open week.

Engaging with Local Authorities

Being a national key point, regular meetings are held with various stakeholders. These include meetings with the SAPS, eThekweni Health and the Island View precinct. A meeting with the City Manager was also held alongside other engagements to ensure alignment between the City and the refinery. ✓

In addition, we focused on maintaining good working relationships with the municipality, keeping them informed of our activities, ongoing projects:

- Our emergency response team held a Road Safety Awareness Campaign in conjunction with Metro Police, SAPS and our security service provider. This was to raise awareness about the importance of obeying the rules of the road as well as the effects of drugs and alcohol usage in relation to one's judgement and response abilities. ✓
- The HSSE team regularly meets with eThekweni Health Unit to report on the refinery's environmental performance as well as close out any community complains that may have been received by the City as well as by SAPREF.
- We had the pleasure of having the Deputy Mayor, Councillor Fazia Peer at two of our community projects handover ceremonies, namely; Isipingo Clinic Parkhome handover as well as at the 20th science laboratory handover at Mafumbuka High School in Umlazi. The Deputy Mayor commended SAPREF for the work we are doing with neighbouring communities. ✓

Engagements with Emerging Contractors

In response to the needs of emerging contractors, we have made a concerted effort to enhance our relationship with local business forums. During the year, we have had a number of engagements with the leadership of the Durban South Business Forums focusing on finding ways of working together to address their needs and find working solutions. We are proud that these engagements have now started to yield results.



Our 2018 state of the art science laboratory that was handed over to Mafumbuka High School was established by emerging contractors from our neighbouring communities. As SAPREF, we are committed to finding opportunities for emerging contractors from our fence line communities. This is also done through engagement with our main mechanical contractors. This model of community development is a perfect marriage of our skills programs as well as our enterprise development initiatives.

Engagements with the Media

To strengthen relationships and improve the media's understanding of our organisation, SAPREF had an open day for media. Media houses were invited to a tour of the refinery and open discussions regarding the refinery operations were held.

This created an opportunity for media to understand SAPREF operations in order to be better informed about refinery

terminology as well as have an understanding of upcoming projects. As part of Women's Month activities, a media breakfast for women in media was also held in August.

A media engagement plan for 2019 has been developed in order to keep the public aware of the activities of the refinery, especially as it is a TurnAround year.

The SAPREF Community Liaison Forum (CLF)



In 2018, the CLF had to be reconstituted as per the stipulations of the CLF terms of reference which states that the forum's period is 3 years. This process involved an invitation to non-government organisations (NGO's) and community based organisations (CBO's) from our fence line communities to join the CLF. ✓

An independent CLF facilitator was also appointed after following procurement processes as the previous contract had also expired. MINE Solutions was appointed as the new independent CLF facilitator. CLF meetings are held bi-monthly and focus on discussions around SAPREF's social, environmental and operational performance. Feedback is also provided by the forum members on key activities in their respective areas and on the work of their community programs.

The CLF provides a medium for SAPREF to obtain insights on the social ills that are common to all communities that provides the framework for CLF projects during the year. The CLF also embarks on initiatives that make a tangible difference to the lives of community members. In 2018, the SAPREF CLF continued with the career guidance initiative that was started in 2017 which aims to assist Grade 9 learners make better informed subject choices that will later impact their future careers. This initiative has given over 1000 learners an opportunity to learn about different careers and they also received wellness education. The Blue Roof Career Guidance Centre facilitated this program in their state of the art centre as well as offered health and wellbeing program and support to the learners.

HUMAN CAPITAL

Growing Our People

SAPREF is committed to “Grow Our People” as one of the Anchors of our Vision 2022. Our inhouse training centre and technical competence assurance departments provide human capital development that increases the skills and knowledge of our employees and talent pipeline through various learning initiatives. In 2018, we continued to strengthen our efforts to achieve a highly competent workforce and a strong talent pipeline as evidenced by the various programs below.

Growing Our Talent Pipeline

Our Training Centre is fully accredited by the Chemical Sector Education and Training Authority (CHIETA) to provide learnerships and apprenticeship programs. Learners were recruited into our programs through our partnership with the local community, schools and education institutions. SAPREF offers various programs for our pipeline development, including:

Investing in School Programs ✓

Our learning programs start as early as high school. Our school talent pipeline program supported 60 learners with scholarships to complete grade 11 and 12 in various high schools around the Durban South Basin. This flagship program aims to deepen high school learners' understanding of the



UNIVERSITY BURSARIES ✓

SAPREF offers a bursary program to university students to study towards BSc Engineering degrees in different disciplines. We awarded bursaries to the value of R2.83 million to support 30 university students. Each SAPREF bursary covers tuition, residence fees, books, meals, a monthly allowance as well as exposure to refinery operations during vacations. The bursary program feeds into a pipeline of our graduate engineer program that trains graduates in the workplace to gain industry experience.

engineering sector so that they can make informed career choices. Through the program SAPREF provides financial support as well as industry exposure and mentorship to selected Mathematics and Science learners. In total our investment in this program was R358 200.



Investing in Learnerships

To build a skills base in young people and enhance their career prospects, learnership programs are offered. They are a combination of classroom study, practical and on-the-job training. Learnerships play an important role in advancing careers as they lead to qualifications recognised by the CHIETA.

In 2018, an additional 58 unemployed youngsters joined the SAPREF Learning Program to pursue qualifications in chemical operations, electrical, instrumentation, analytical chemistry and mechanical fitting disciplines. The total investment of R6.7 million ensured that we grow our own future talent by providing qualifications and experience to youth so that they are employable in the rest of the chemical industry. Some of the learners in our Learnership program are trained through the Isipingo-based Durban South Training Trust (DSTT) where artisan training in boiler making, welding and mechanical fitting is provided for the Durban South community. In 2018 this part of the program invested R 5.2 million towards training 116 learners.

Technical Development ✓

Ensuring capability within our production department is one of the major focus areas of the People Agenda. In 2018 we appointed seven interns into permanent Process Operator positions and three Inspection interns into permanent positions after they had successfully completed their structured internship programs. In addition, 125 employees were promoted within the organization after successfully achieving various competencies and other requirements linked to their career paths.

HSE competence development continued to be a key element of our technical skills program. A key 2018 achievement was completion of HSE critical competencies for front line barrier managers.

GROWING OUR LEADERS ✓

A group 29 leaders participated in EVOLVE, our bespoke leadership development program. This brings the total of leaders that have been trained through this program to 145 and our total investment to R27 million since the program's inception in 2015.

STAFF EDUCATION ✓

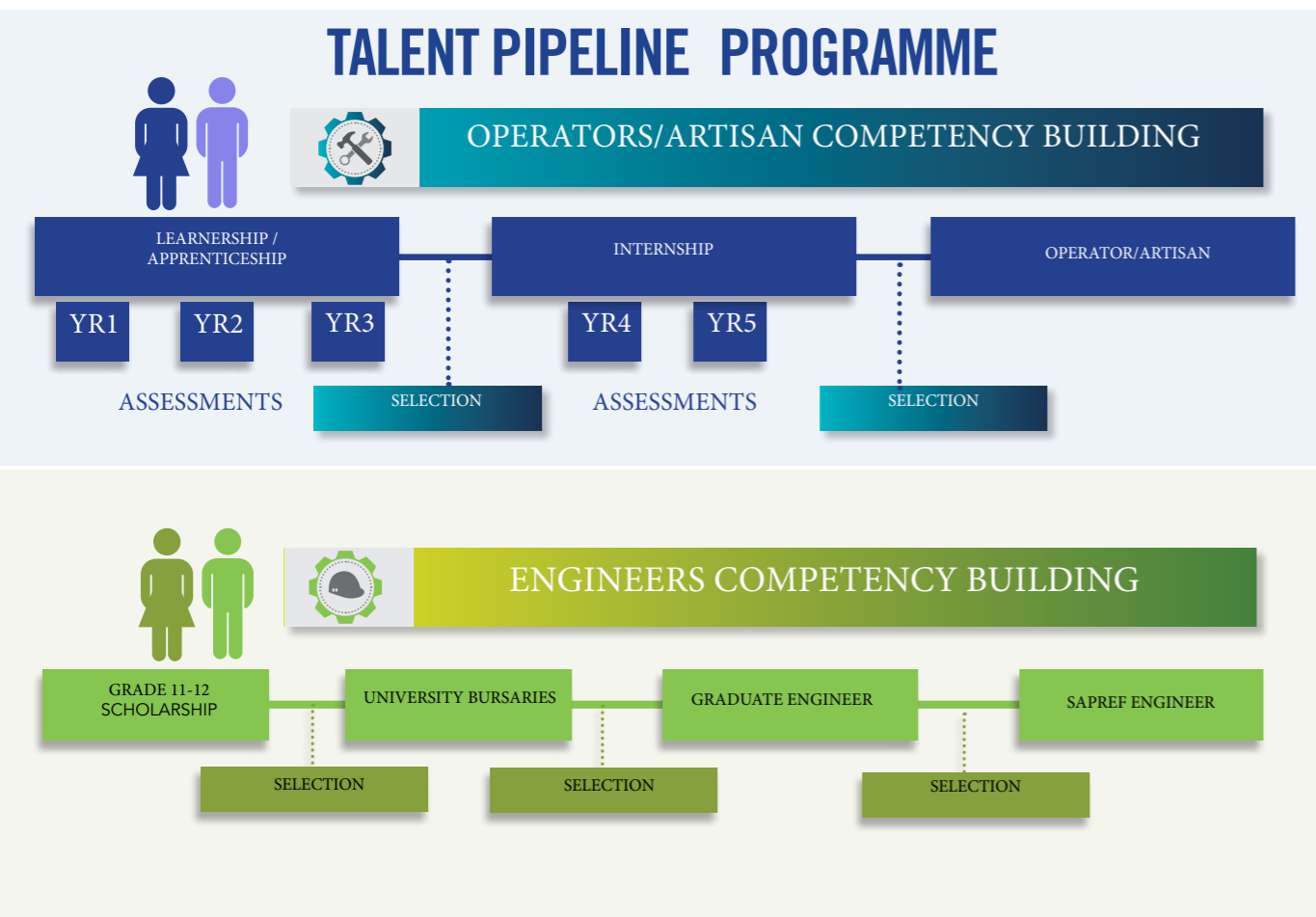
Every year we award study assistance to our employees who wish to further their studies towards any formal qualification within South Africa. The intention of the study assistance program is to provide employees with occupationally directed qualifications. In 2018, we invested R716 000 towards the development of our staff. This figure excludes travel and accommodation costs; which are also covered by this program.

TOTAL STAFF COMPLIMENT



SAPREF has recognized that despite its Maintenance trainees being trade tested, lack of work experience makes it difficult for them to secure employment. To respond to this challenge the company has extended its apprenticeship learning program to provide a two-year internship in the Maintenance.

The development of career paths for Maintenance and Engineering through a job family model was successfully completed following extensive staff engagement sessions. This led to the implementation of the Artisan and Technician Internship programs in Maintenance. Fifteen previous learners from the Learnership and Apprenticeship program were recruited into this program and the program currently has a total of 23 interns. In total R1,1 million was spent on up-skilling and certification of our artisans and inspectors.



HEALTH PERFORMANCE

Effectively managing health risks in the workplace forms part of our commitment to “no harm to people” and to compliance with HSE legislation.

Our occupational health program seeks to prevent and mitigate Occupational Health risks. We analyse, monitor and manage exposure and provide preventative measures for a range of issues. Our program includes the following: ✓

- Fitness to Work (i.e. pre-employment medicals, Return to work – post pregnancy, IOD’s long-term sickness, Medication verification, incapacity management, substance abuse).
- Medical surveillance – periodical medicals
- Health screenings – campaigns and on request, periodically
- Health assessments/Medical Assessments (i.e. Periodic medicals, biological monitoring, exit medicals, HRA’s, Occupational Hygiene Monitoring program).
- Medical Emergency response
- Assurance processes – Canteen food safety, Legionella inspections, Fatigue management, Health hazard matrix, Annual Occupational hygiene survey
- Hazard Communication – Safety reps meetings participation, HSE STOPS, Toolbox talks, Classroom sessions, posters
- Health Incidents reduction - investigations and corrective measures

Medical Surveillance

Periodic Medical surveillance is conducted to detect signs of potential illness at an early stage, and assist our people in the recovery and management of illness that is result of exposure at our workplace. Assurance on compliance to Medical Surveillance is done via access control. Fitness to work verification for Contractor staff involved in High Risk activities is done by SAPREF Occupational Health Clinic.

We continued in implementing and maintaining exposure controls; including the following: ✓

- Testing and verification of breathing air quality; i.e. compressed air supply and cylinder.
- Signage installation completed and ahead of industry.
- Multi-stakeholder forum formed to review and propose improvements on Welding fumes controls.
- Legionella exposure controls: – daily reporting of At-Risk Water systems to allow immediate intervention in case of deviations.
- Drinking water quality monitoring and interventions.



CARING FOR WELLBEING OF THE WORKFORCE:

SAPREF recognises that healthy employees, are employees that are both physical and mentally fit to do the job they are employed for.

We seek to enhance the physical and wellbeing of our employees by providing the following: ✓

- SAPREF sponsored its employees to participate in national races and gym sessions; to kick start staff, learners and interns journey to living healthy lifestyles.
- Rigorous follows up via access control are done by the on-site Occupational Health Clinic on personnel with risk factors.
- Provision of Flu vaccination
- On-site Cervical cancer screening, health screening and family planning through partnership with Isipingo Clinic.
- Healthy eating options at the Canteens.

EMPLOYEE ASSISTANCE Program (EAP) ✓

SAPREF cares about its employees social wellbeing and recognizes that personal problems may adversely affect their work performance.

Our Employee Assistance Program is remedial and comprises of reactive/crisis interventions designed to assist employees in the identification and resolution of personal problems which include, but not limited to; marital issues, family problems, emotional issues, legal matters, financial challenges, substance abuse, illness or other personal problems that adversely impact upon their health as well as their productivity.

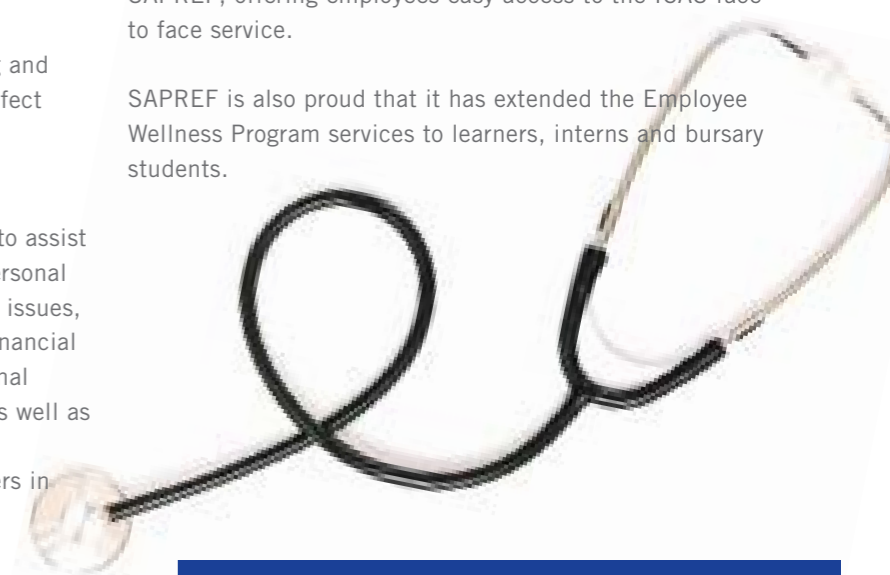
There is further assistance available to line managers in managing work related issues.

SAPREF has partnered with ICAS to provide EAP services. In 2018; the overall engagement rate amounted to 29.8%, which decreased when comparing to 35.5% during the comparable previous period in 2017. However, 2018 engagement rate achieved is still above industry benchmark on 24.4%.

On-site therapist services are now available for SAPREF staff. This is a convenient, cost-effective service offering for

SAPREF; offering employees easy access to the ICAS face to face service.

SAPREF is also proud that it has extended the Employee Wellness Program services to learners, interns and bursary students.



Our 2019 focus area

- Deliver a safe turnaround.
- Occupational exposure surveys by AIA and chemical exposure Task Monitoring.
- Medical emergency responders training – First aid level 1 – 3.
- Noise and Chemical exposure reduction at source
- Wellness program.



SAFETY PERFORMANCE

Our primary HSSE focus is to consistently ensure safe, reliable operation of the refinery. The OHS act, SHELL Control Framework, the 9 Process Safety Fundamentals, our HSSE Specifications, Operating guidelines and twelve life-saving rules guide us.

We report safety non-conformances for appropriate learning and actions. We continue to use the Continuous Improvement System (CIS). This enables us to have proper closed out of action items from incidents and near misses reported. Despite our goal to achieve no work-related injuries, we had 5 Recordable injuries of which 4 were Lost Time Injuries (LTI) cases in 2018.

We continue to strive for goal zero mindset. Safety measures and initiatives introduced in 2015 and Vision 2022 are yielding good results. We continue our journey for "GOAL ZERO"

Total Recordable Case Frequency Rate

A total recordable injury case is a measure of injuries that require medical treatment other than first aid. The accepted method of measuring safety at SAPREF is the Total Recordable Case Frequency (TRCF) per million hours worked.

As indicated in the graphs above, in 2018 we achieved a TRCF of 0.9 due to 5 injuries which 3 injuries above our limit. We have consistently had TRCF of less than 1.0 from 2013

when we introduced Behavioural Based Safety process. We were able to achieve 1 and 2 million hours without a disabling injury.

The Field Risk Advisor and Field Compliance Coach are constantly in the field to manage and make sure of compliance on high risk activities. This ensures our journey on Safe, Reliable Operation.

Personal Safety Leadership Culture

We continue to ensure visible leadership in the field by continuing with Service Provider 16(2) safety walks, quarterly safety meetings with Service Provider's 16(1), leadership and extended leadership safety walks. Front Line leaders making sure that they understand how the work is done in the field.

We are working on fit for purpose method statements, quality Last Minute Risk Assessments and encourage our teams to raise their hand when they have dilemmas. We continued with weekly coaching sessions for our permit issuers to improve the quality of the permit to work process and reducing clutter in their job by looking at permit to work efficiencies. This



In 2019, we will focus on the following:

- Supporting the delivery of the site goal of Safe Reliable Operation.
- Intensify LT / ELT scheduled walks and Service Providers 16(2) walks
- Permit to work training in preparation for 2019TA
- Preparations for 2019TA as HSE Leads.
- Continue to streamline our Permit to work processes.
- Share incident learning through incident alerts.
- Continue to do BBS observer training.

will give more time for our permit issuer to be in the field. We continue to grow our intervention culture through Eyethu (Peer to Peer).

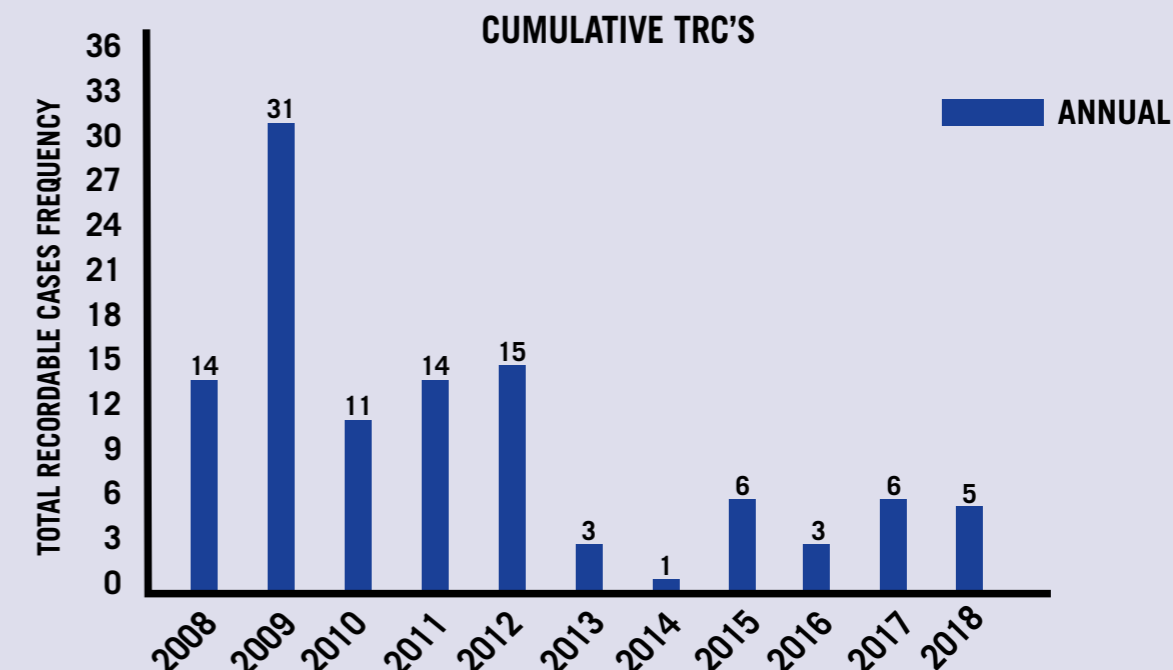
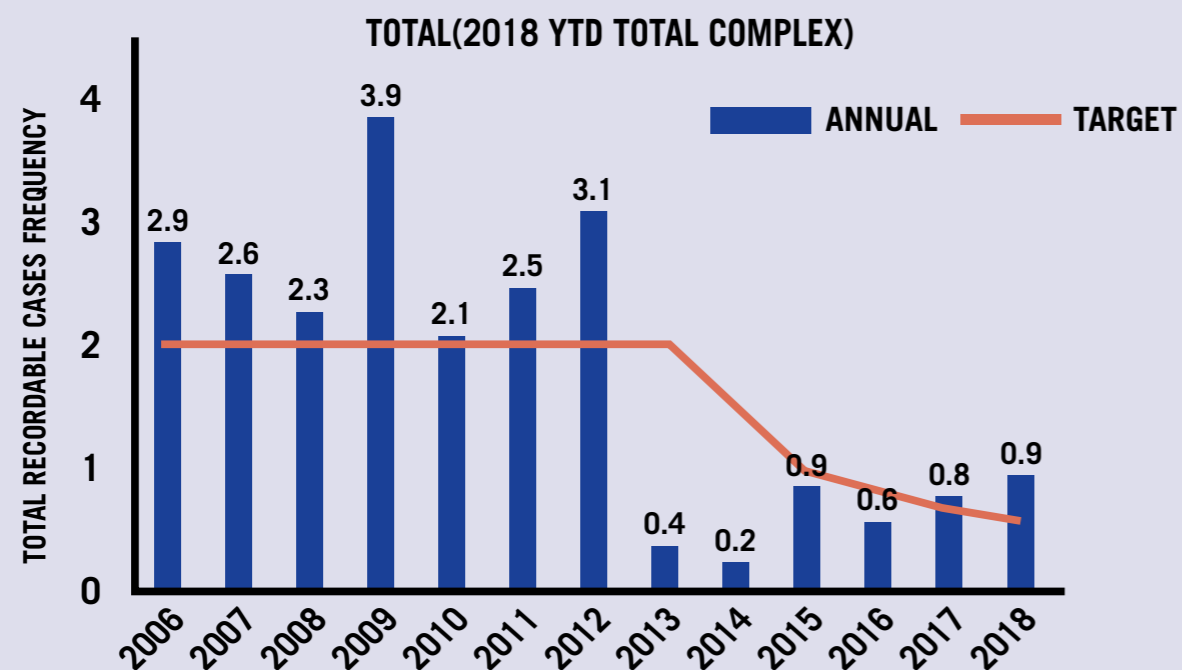
MD's Quarterly meetings with Service Providers 16(2) and contractor Holders ensure alignment to company strategy.

Behavioural Based Safety (BBS) ✓

In 2018, BBS celebrated its 5th year of existence at SAPREF. We conducted BBS process review with BST consultant. This allowed us to streamline our BBS process to an improved performance that allow the BBS coaches to spend more time in the plant.

In addition, we achieved the following:

- We continued to train BBS observers.
- Weekly Asikhulume nge-BBS (Let's talk BBS) sessions which focused on BBS critical behaviours, barriers removed and understanding of each person in BBS
- Safety Day was held on the 17 April 2018.



WATER UTILISATION

In 2018 Sapref consumed total of 4.6 million kilo litres of water, 16% of which was sourced as reclaimed water - trend graph below shows the monthly consumption rates for municipal potable & reclaimed water.

The refinery has developed master plan for reducing its consumption of fresh water, aiming to achieve reduction of 15% within next few years. The following interventions have significantly improved our water utilization efficiency.

Ion Exchange Demineralization Units

Reinstatement of the regeneration chemical concentration online analysers has enabled optimization of the ion exchange regeneration of the units. This has significantly reduced the amount of fresh water needed to rinse the ion exchange units after chemical regeneration. The online analysers also enabled online optimization of this regeneration process and thus improved unit



Future Focus Areas

Demineralized Water Project – This capital project will see SAPREF utilizing its maximum allocation of reclaimed water from Durban Water Recycling. The project is now approaching the Design Phase and is expected to be ready for start-up early 2020.

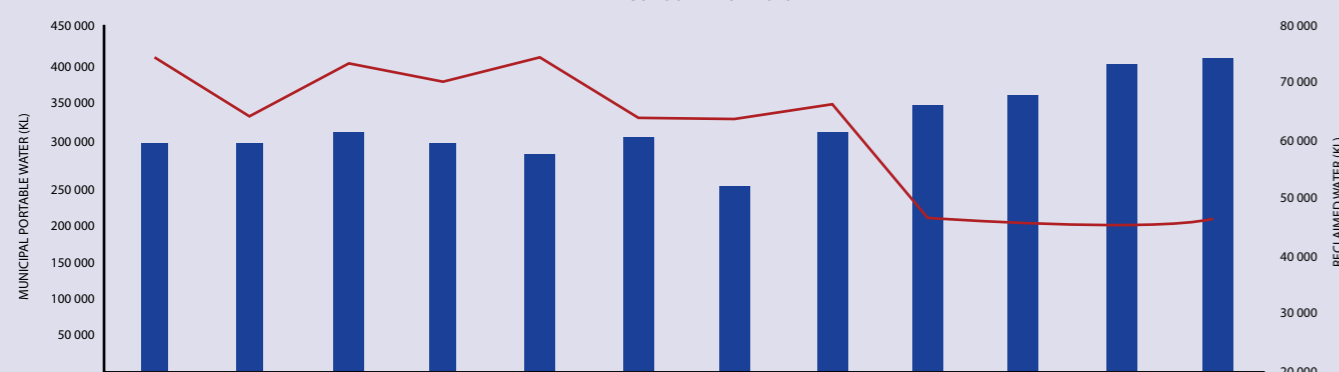
Effluent Recycling – As part of a broad Water Master Plan, SAPREF is exploring areas to further minimize water consumption. We have, in partnership with Mintek Advanced Materials Division started the process of characterizing our effluent to develop solutions that will help with recycling and treatment of this effluent for use in the refinery processes.

performance. This limits the amount of regeneration waste that exits the refinery as effluent.

Reverse Osmosis Raw Water Filtration

The Reverse Osmosis unit serves to maximise the use of reclaimed water (minimising intake of municipal potable water). This plant has a design capacity of 3200 tons per day. Due to the poor quality of water, the unit was unable to maintain its design throughput of 3200 tons per day. Early in 2019, the RO unit operation has been improved through use of more efficient filtration units enabling the unit to maintain the design throughput for more than 6 months.

WATER CONSUMPTION 2018



ENERGY EFFICIENCY



Energy Efficiency

In 2018 Sapref energy efficiency measured in terms of Energy Index was 123 which is a disappointing performance when compared against refinery target of 118. ✓

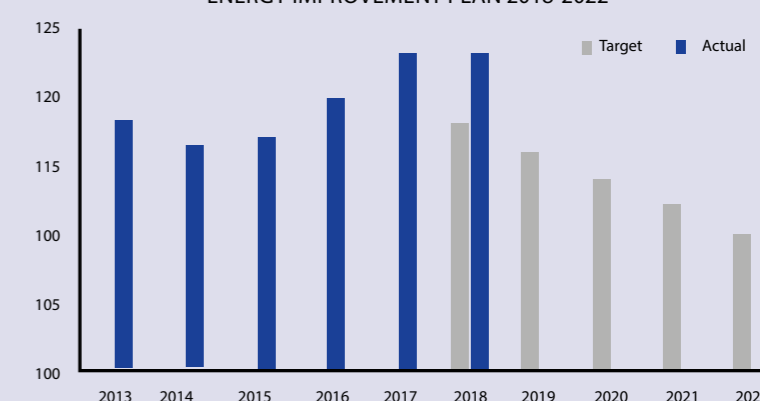
The main reason for this poor performance is related to process unit unreliability during the year which resulted in unplanned outages, lower refinery utilization and consequently poorer energy efficiency.

The root cause for this is being addressed during the planned 2019 TAR window.

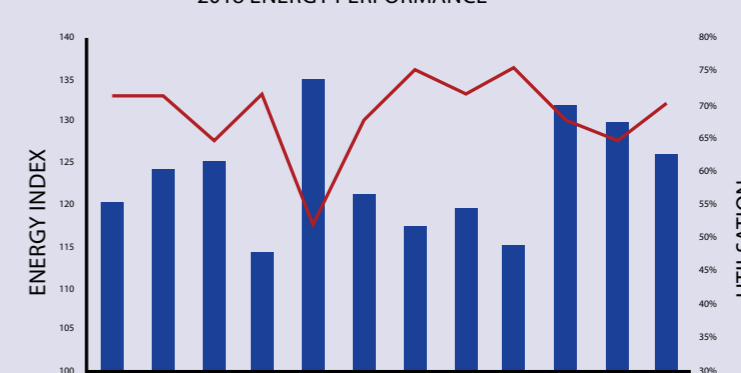
Early in 2018, Sapref appointed a dedicated Energy Focal Point in the Technology Dept. to renew focus on improving energy efficiency across the refinery.

An energy improvement roadmap has been developed to deliver at least 10 points Energy Index reduction over the next 5 years; focussing on operational measures in the first 2 years and implementing minor capital improvements during planned refinery turnaround windows in 2019/2021.

ENERGY IMPROVEMENT PLAN 2018-2022



2018 ENERGY PERFORMANCE



ENVIRONMENTAL PERFORMANCE

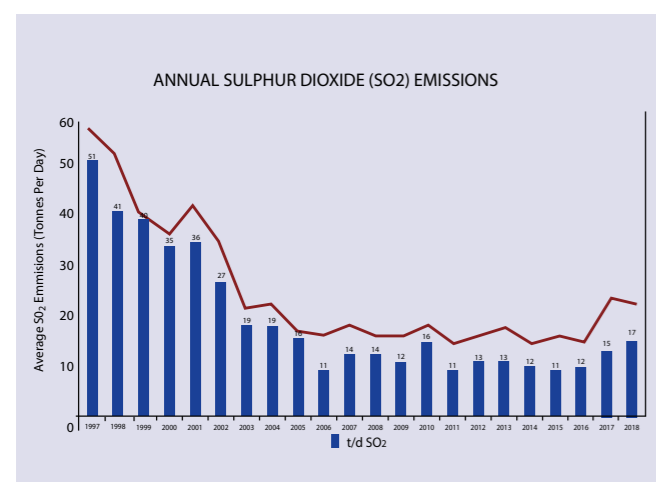
SAPREF is committed to carrying out our business in such a way that the health and safety of people, both on and off our sites, is not endangered and that the impact on the environment is minimized. Whilst we naturally comply with the health, safety and environmental measures required by law, we continuously strive to improve our environmental performance far beyond permit levels.

Our Environmental Management system is ISO 14001:2015 certified and also complies to the Shell HSSE Control Framework standards which provide minimum compliance requirements for Air Emissions, Greenhouse gases, Waste and Water management. We frequently review our environmental risks and opportunities and ensure that management plans are in place for all our significant environmental risks. ✓

AIR EMISSIONS MANAGEMENT

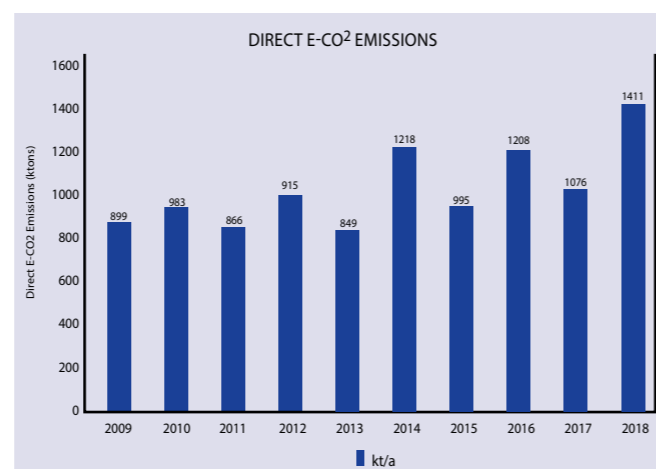
SAPREF monitors its emissions of priority pollutants, namely sulphur dioxide (SO₂), nitrogen oxides (NO_x) and particulate matter (PM₁₀) and reports performance to the relevant authorities as per specified time-frames. In 2018, the refinery sustained its performance within the set permit limits as well as the minimum emission standard point source limits for existing plants. More stringent new plant standards come into effect as of April 2020 and we believe we are on track to meet these emission standards.

Sulphur Dioxide (SO₂)



The graph above indicates, on the secondary axis, the current performance in “kg SO₂ /tonne of crude throughput” versus the Minimum Emission Standard limit of 1.2kgSO₂/ton crude.

There was a slight increase in SO₂ emissions in 2017 due to several external power dips and unit upsets.

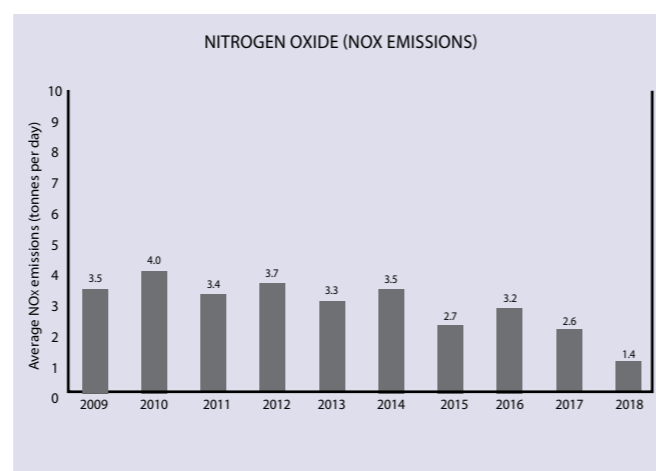


Greenhouse Gases

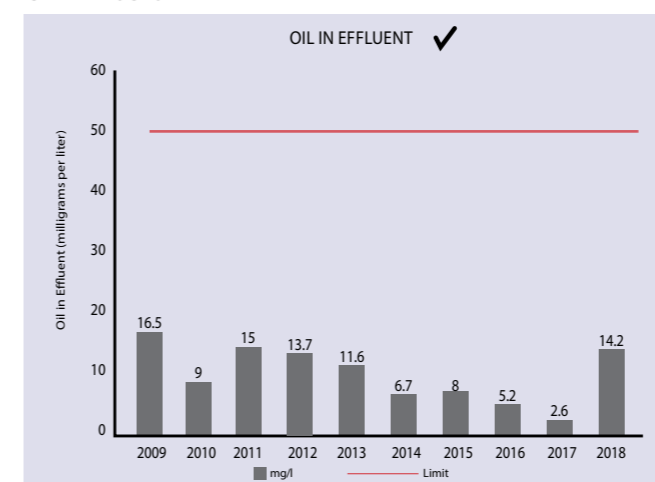
The reported green house gases comprise of the direct CO₂ and equivalent methane emissions. Reduced emissions in 2017 are due to the maintenance Turnaround. 2018 was a non-turnaround year which resulted in increased emissions.

Fence Line Monitoring

SAPREF runs an independent external fenceline air monitoring program for benzene, toluene, ethylbenzene and Xylene (BTEX). The 2018 results show the annual average for total benzene at the fenceline is 1.27 micrograms per meter cubic, which is well below the National Ambient Air Standard of 5 micrograms per meter cubic.



Oil in Effluent



The average oil concentration in effluent has been below 20 mg/l since 2009 compared to the specified limit of 50 mg/l. The increase in oil concentration in 2018 was due to reduce separation efficiency in Crude distiller #2 desalter and this is being addressed. SAPREF's CPI and Parallel Plate Interceptor (PPI) are routinely cleaned to ensure that they perform efficiently in separating oil from water to ensure that oil is recovered for re-use and that the effluent leaving site meets our permit specifications for oil content. Online cleaning of Crude Tanks will be introduced in 2019 and we expect this to assist with reduction of oil in effluent.

In 2019 we will focus on the following:

- Maintaining consistent ambient performance as measured by the eThekweni Multi-Point plan;
- Driving energy efficiency and GHG emission reduction;
- Implementing projects to ensure compliance to future air quality and waste management regulatory standards within specified time-frames;
- Implementing strategies for water conservation.

Management of Waste



Our approach to waste management is informed by the principles of the waste management hierarchy with emphasis on reducing waste generation, increasing recovery and re-use onsite as well as recycling off-site. Current waste types recycled include non-hazardous waste (paper, cardboard, cans, glass, plastic, scrap metal and uncontaminated pallets) and hazardous waste (empty drums and isotainers, oil and catalyst).

SAPREF is currently implementing several projects and operational changes to reduce or eliminate the disposal of liquids and sludges to landfill. In 2017 the recovery of high calorific waste for use as energy in the cement industry was started and in 2018, 2621 tons were diverted to the cement industry.



SOCIO-ECONOMIC DEVELOPMENT

In 2018, SAPREF continued to invest in its neighboring communities in the South Durban area.

Over the years SAPREF has made it a priority to invest in our neighboring communities through sustainable social investment initiatives. One of the highlights in 2018 was the establishment of our 20th science laboratory at Mafumbuka High School.

Our sustainable social investment initiatives support education, health and community development programs that help enrich people’s lives. Some of the projects funded

in 2018 included renovations and provision of a park home at Isipingo clinic, office equipment to better enable Siza Community health care services, tarring and supply of jojo tanks at Platt Drive Primary School and career guidance and wellness initiative for high school learners. These programs mainly benefit communities closest to the refinery namely Austerville, Wentworth, Isipingo, Umlazi, Lamontville and the Bluff.



The total spend on Socio–Economic Development for 2018 is R1 462 054 as indicated in the table below:

Organisation	Project	Education	Other
Hands of the givers	Establishment of a community mobile bakery		R 34,024
Mafumbuka High School	Establishment of Mafumbuka science laboratory	R 842,887	
CASME	Provision of science lab support	R 287,040	
Little Darling Educare	Bicycles for the Pre-School	R 5,199	
Umlazi Old Age Home	Freezer for thier kitchen		R 2,699
CLF initiative	Career guidance initiative		R 112, 289
SERVE	SAPREF staff CSI projects		R 138,729
Siza Community health care centre	Provision of office equipment		R 18,189
Mzamo Child and Guidance	Provision of Laptops		R 20,998
Total		R1 135 126	R326 928

GRAND TOTAL – R1 462 054

A significant portion of the SAPREF Corporate Social Investment funding was spent on the education sector. This is proven by the number of initiatives that the company invested in 2018 and in the previous years.

Our flagship Corporate Social Investment education project is the annual establishment of science laboratories in neighboring schools. In 2018, SAPREF established a science laboratory at Mafumbuka High School. This brings the number of science labs established in schools to twenty (20).

We also ensured that teachers of schools who have previously benefited from having a science lab donated by SAPREF received on the job support and replenishing of

lab chemicals for the rest of the science labs.

This support has been provided through Centre for the Advancement of Science and Mathematics Education (CASME).

The establishment of Mafumbuka High School science lab involved converting a classroom into a fully equipped science laboratory, complete with work benches, cupboards, Bunsen burners, science kits and chemicals. We will continue with this investment as we believe that the love for Maths and Science which are core subjects for engineering and trade related careers are enhanced when learners are given practical exposure.

SAPREF Employee Community Involvement Program (SERVE)

SAPREF employees continue to make a difference in their communities through the SAPREF community involvement program, called SERVE. Through SERVE, employees are able to give back to the community, build relationships amongst the teams while making a meaningful impact to the lives of others.

SAPREF Employee Community Involvement Projects

Project	Project Description	Project Team
Vusikhono Community Centre	These colleagues raised funds for the Wendy house and donated a Makro voucher to support a feedings scheme initiative for orphans and vulnerable children.	Electrical team
Ikusaselihle	This team provides career guidance, mentorship and assist grade 12 learners apply for tertiary education through CAO applications.	Various sections
Bobbie Bear	Bobbi Bear is a human rights organisation committed to helping sexually abused children. The team donated kitchen appliances and planted flowers.	HSSE team
Team Food for Life	Team provided meals to underprivileged schools during Mandela Day.	Engineering team
Mzamo Child and Guidance Training Initiative	This team provided financial support to the organisation through selling of casual day stickers and provided nappies for children living with disabilities on Mandela Day.	Commercial team
Bambisandla Siyanakekela	This organisation looks after orphans and vulnerable children in Umlazi. This team raised funds and did minor renovations inside the home – such as painting, added built in cupboards and supplied them with groceries.	The HR team
The Love of Christ (TLC) Ministry	TLC places and adopts vulnerable children. This team raised money towards the home's daily necessities.	Commercial team
Wentworth Organisation of Women	Team served meals for Wentworth Organisation of Women on Mandela day.	Various sections
St. Gabriel's Church Soup Kitchen	This team provided mealson Mandeladay and also bought a refrigerator that will be used to store vegetables for the soup kitchen.	Various sections
Malibongwe Senior Citizens	Team served meals for the Malibongwe Senior Citizens Club on Mandela day.	Various sections
Junargarth Primary School	Team served meals at Junargarth Primary School on Mandela day.	Various sections
Bobbie Bear, Food for life and SPCA	Fundraising initiative for various organisations in support of their projects.	Various sections

FEEDBACK ON THIS REPORT

We welcome your comments or suggestions on how we can improve this report. Should you have any questions you can contact the Sustainable Development Department.

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