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NAKISANI



THE OFFICIAL NEWSLETTER OF THE NCPC

“GET IT CLEAN”
CP for a sustainable future





Hwalani Maanda

Editor's Desk

You are holding in your hands the first issue of *Nakisani*, the official newsletter of National Cleaner Production Centre - South Africa. *Nakisani* is a Tshivenda word which means "Get it clean".

In this issue we inform you about the NCPC's successes and activities over the past three years. You also get the opportunity to meet the Centre's staff members. Yes, they are all professionals who are prepared to take the Center to greater heights.

As a national asset the NCPC has been involved in an awareness drive to market and brand itself as well as holding capacity-building workshops on cleaner production through roadshows and training.

Nakisani is the beginning of a new chapter for the NCPC that seeks to push the boundaries of cleaner production in South African industry, and to challenge our readers to think globally and act locally. More than being a platform to communicate news on cleaner production, *Nakisani* will become a learning platform for everyone through developmental and innovative debate.

I hope you enjoy reading our newsletter as much as we enjoyed putting it together. I wish you all a peaceful festive period and look forward to your comments and suggestions towards making *Nakisani* a relevant publication.

Letters and comments may be forwarded to me via the following email addresses: Hmaanda@ncpc.co.za or Info@ncpc.co.za

Until next time

Hwalani Maanda

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Ndivhuho Raphulu, Director: NCPC-SA

Director's Foreword

This introductory issue celebrates the successes of the NCPC since its inception at the World Summit on Sustainable Development (WSSD) in 2002 when the Department of Trade and Industry (dti), signed a three-year cooperation agreement with the Austrian and Swiss governments through the United Nations Development Organisation (UNIDO) to establish a South African National Cleaner Production Centre (NCPC). At its inception funding was provided by the partnering entities for a period of three years ending December 2005.

However, **the dti** has now committed itself to funding NCPC-SA for yet another term, providing the Centre with an opportunity to become a true national asset dedicated to helping its stakeholders to achieve greater production efficiency and understand their environmental footprints. This will enable them to continuously manage and improve their environmental impacts.

The Department of Environmental Affairs and Tourism's (DEAT) national cleaner production strategy is almost ready and will provide the country with a tool to define national Cleaner Production (CP) activities. This will allow us to begin to set clear targets that will include other aspects of CP in terms of policy requirements and public understanding of sustainable consumption and production issues.

The NCPC will be active in the following:

1. Sector Programmes

Currently we have a well developed and managed clothing and textile cleaner production programme in Cape Town, the Clothing and Textile Environmental Linkage Centre (CTELC). This is a Danish Industrial Development Agency (DANIDA) funded programme, which the NCPC will continue with. We plan to establish similar programmes in the Agro-Processing, Chemicals and Automotive Sectors in the next 2-5 years.

2. Special Projects

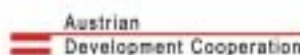
Special Projects are aimed at creating opportunities to undertake CP activities in other sectors or economic areas that are not covered under Sector Programmes e.g. energy efficiency. It is also an opportunity for us to get involved in relevant government activities that are fundamental in ensuring greater awareness and capacity building.

3. Regional or African Projects

These projects give us an opportunity to participate in CP activities in the region, which were undertaken by either another NCPC or a relevant government department in other countries. Our participation in these projects will be determined by our ability to offer the required skills and resources based on the capacity of the Centre. It should also be noted that due to the need to fulfil South Africa's sustainable consumption and production needs, we will prioritise national activities that fall within category 1 and 2 above before we accept any requests to provide assistance regionally.

In conclusion, I would like to thank all the stakeholders who participated and contributed to the sterling performance of the organisation.

Mr Ndivhuho Raphulu
Director: NCPC-SA



NCPC History

AN OVERVIEW OF THE NATIONAL CLEANER PRODUCTION CENTRE - SA

South Africa launched its first National Cleaner Production Centre (NCPC) at the WSSD at the Sandton Convention Centre on 3 September 2002, when the Minister of Trade and Industry, Alec Erwin, signed the agreement for the launch of the NCPC in the presence of Foreign Ministers of the donor countries, Switzerland and Austria. The Centre is a collaborative effort between the United Nations Industrial Development Organisation (UNIDO), the Swiss and Austrian governments, the South African Department of Trade and Industry (**the dti**) and the CSIR.



Mr Joseph Deiss, Minister for Foreign Affairs of Switzerland;
Mr Carlos Magarinos, Director-General UNIDO;
Ms Benita Ferrero-Waldner, Minister for Foreign Affairs, Austria;
Mr Alec Erwin, Minister of Trade and Industry; and standing
Petra Schwager (UNIDO), at the signing ceremony to launch the NCPC.

The developmental objective of the NCPC is to enhance the competitiveness and productive capacity of national industries, through the increased application of cleaner

production techniques and the transfer of environmentally sound technologies. In doing so, the NCPC will promote dialogue between industry stakeholders and government. This will in turn enhance market access for South African products by assisting in the development of environmentally acceptable manufacturing processes that meet international standards.

The NCPC is based at the Council of Scientific Industrial and Research's (CSIR) Materials Science and Manufacturing Operating Unit. Its mandate is to conduct in-plant assessments and training programmes, promote investment in cleaner technology and provide policy advice and information. The Centre is currently managing cross cutting projects in cleaner production through sector specific cleaner production programmes, focusing on the Chemicals, Textiles, and Agro-Processing sectors. The NCPC will work closely with existing cleaner production programmes such as the DANCED initiative and projects from universities and other institutions.

The Centre has over the years managed to advise and implement cleaner production in various industries. The Centre's vision is to be recognised as the premier national asset for cleaner production, which will be achieved through advocating cleaner production, capacity building and supporting the transfer of environmentally sound technologies. ●

THE NCPC TEAM

Ndivhuho Raphulu (Director), Mano Ram Reddi (Project Manager),
Hwalani Maanda (Communication Officer), Kevin Cilliers (Project Manager),
Thanyani Malange (Office Administrator), Vedika Singh (Operations Manager).



On the Road

In the past few months the NCPC has been involved in a number of road shows to introduce the Centre, its new branding and activities.

JCCI

The NCPC, in collaboration with the Swiss Trade and Investment Network Switzerland-Southern Africa (TINSSA), and the Johannesburg Chamber of Commerce and Industry (JCCI), held a seminar on 12 August 2005 at the JCCI offices in Johannesburg. Representatives of Swiss and South African companies attended the event, which highlighted the services of the NCPC and the concept of cleaner production. This road show gave the Centre the opportunity to meet and mingle with various business institutions who are interested in implementing the process of cleaner production. ●



Members of SALGA with the NCPC team



Members of TINNSA, NAFCO and JCCI with the NCPC team at the road show

SALGA

A CP advocacy dinner with South African Local Government Association (SALGA) delegates was held in Pretoria on 15 August 2005. Mr Ndivhuho Raphulu, the Director of the NCPC, highlighted the Centre's objectives and the value added role that the NCPC can offer to local government. In his presentation the Director expanded on various CP topics creating a better understanding of CP and clearing up misconceptions about Cleaner Production.

The Centre looks forward to more road shows scheduled for 2006 in the various provinces of South Africa. ●

Training and Capacity Building

MPUMALANGA

On 20 September 2005, NCPC presented a one day training course to the Department of Agriculture and Land Affairs (DALA) in Pilgrims Rest, Mpumalanga. Twenty eight departmental staff members received training on basic Cleaner Production and its methodology. The training was well received by the department. ●

UNIDO Toolkit Training

The NCPC successfully hosted the first cleaner production training workshop on the UNIDO toolkit. The training took place on the 23 and 24 November and was attended by 12 participants from all over South Africa who are involved in cleaner production, environmental goods and services, and related fields.

Dr Thomas Bürki, a UNIDO consultant from the University of Applied Sciences in Switzerland, presented the two day intensive workshop. The objective of the training was to build consultants' capacity in cleaner production. The consultants

were chosen from the database of those who responded to a national call that was advertised in Sunday newspapers as well as on the NCPC website.

Certificates of attendance were issued courtesy of NCPC and UNIDO. The next training workshop will take place during the 2nd week of March 2006. ●



Participants in the Unido Toolkit training: Front Row L-R: Kevin Cilliers, Charlotte Tladi, Milton Buchalter, Woody Naicker, Ismail Banoo
Back Row L-R: Mano Ram Reddi, Sifiso Hadebe, Pule Monamodi, Hamied Mazema, Audrey Dobbins, Budu Manaka, Darrin McComb, Thomas Bürki and Hazvinei Munjoma

Feature Article

NCPC ATTENDS THE 7TH WORLD CONGRESS ON CHEMICAL ENGINEERING (WCCE)

The NCPC recently took part in the 7th World Congress on Chemical Engineering (WCCE) which was held in Glasgow, Scotland. Mr Mano Ram Reddi, an NCPC staff member, presented a paper and a poster on behalf of the Centre.

The paper and poster titled "A South African Perspective on Cleaner Production" addressed issues surrounding cleaner production in South Africa. Due to the fact that cleaner production is of interest to many multinationals and governments alike, the paper and poster presented by Mr Ram Reddi generated amicable interest.

The content of the congress ranged from process safety and sustainable development to human tissue engineering and

engineering education, including the more traditional topics such as process design and thermodynamics. Much emphasis was placed on the environmental advantages of new processes, and the investment that companies are putting into sustainable development.

The general consensus at the end of the congress was that the technical quality and content of the presentations and posters have increased, with sustainable development being a widely debated topic.

Overall, the WCCE was a success and would be considered an ideal avenue to promote and foster new relations in all spheres of Cleaner Production. ●

Abstract

The 2002 World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa, renewed and rejuvenated initiatives surrounding pollution prevention, waste minimisation, economic use of raw materials, process optimisation and various environmental management systems. Due to increasing environmental awareness globally, the South African government is implementing a Cleaner Production (CP) programme in collaboration with numerous stakeholders. Thus, the South African National Cleaner Production Centre (NCPC-SA) was established in 2002 within the framework of UNIDO/UNEP Cleaner Production Centres to drive the SA Cleaner Production Programme.

Cleaner production is a continuous preventative environmental strategy related to plant processes and products. Thus, it is important at this stage that CP audits be conducted in order to ascertain the CP status of South African companies. This paper presents an analysis based on a number of Cleaner Production Quick-Scans that were conducted within Small, Medium and Micro Enterprises (SMMEs) resulting in four possible areas for improvement, i.e. Utilities (Water, Energy and Steam Consumption), Process Control, Instrumentation and Design and Maintenance. ●



Mano Ram Reddi at the seventh WCCE poster presentation.

Contribution Article

the dti

THE DEPARTMENT
OF TRADE AND INDUSTRY



The vision of the Department of Trade and Industry (**the dti**) is that by 2014 South Africa will have a restructured and adaptive economy. Our economy would be characterised by growth, employment and equity, and built on the full potential of all persons, communities and geographic areas.

The requirements to realise this vision includes inter alia an integrated manufacturing economy capable of high degrees of value added and a high degree of knowledge and technology capacity.

The Department takes into consideration that there are two economies in South Africa, the developed and the underdeveloped. The developed economy suffers from a lack of cost competitiveness in relation to the global economy. The underdeveloped part of the economy, which represents the experiences of a high proportion of South Africans, is an area where economic potential is not being enabled and harnessed due to backlogs and under-investment in social and productive capital.

In areas such as policy development, technology promotion, corporate governance and company and corporate regulation, the dti takes care that economic development occurs with due consideration of the economic, social and environmental aspects. The Department's approach to sustainable development, captured in its first edition of the Environmental Implementation Plan (2001), formalised the objective to promote the concept of Cleaner Production (CP) by means of South Africa's own National Cleaner Production Centre (NCPC).

The 2002 Johannesburg World Summit on Sustainable Development (WSSD) provided an ideal opportunity to announce that the dti and international partners had established South Africa's NCPC. The key objective is to improve the competitiveness of industry sectors by means of energy and resource efficiency. Enablers in this regard are

based on a modernised technical infrastructure, which includes a sound technical regulatory regime and affordable access to services around standards, metrology, quality and accreditation. NCPC is a member of the international family of UNIDO/UNEP Cleaner Production Centres. This privilege provides peer support, information sharing and access to international expert bodies.

CSIR as host institution and legal entity to the NCPC provides the necessary administrative infrastructure. A dedicated dti team at the Enterprise Industry Development Division (EIDD) provides strategic direction and activates regular transfer payments from the dti budget. An executive board and an advisory forum complete the governance structure and ensure that the expectations of government, donors and private sector stakeholders are met.

During 2005, EIDD, the NCPC and the dti division: Trade and Investment South Africa (TISA) joined hands in integrating CP as an element of the Customised Sector Programmes (CSP) that are currently being developed. Enterprises in the sectors that started implementing CP are already reaping the benefits in terms of savings, quality improvements and increased market access.

NCPC will in 2006 enter its second phase, which will be characterised by CP programmes at the sector level in the chemical, textile and agricultural processing sectors. A strong link is being developed between the NCPC as a national asset and the commercial environmental goods and services (EGS) industry. NCPC intends utilising suitable CP consultants in its projects. The first group of consultants have been registered and have undergone training in utilising the internationally recognised "CP Toolkit".

CP is a sound example of thinking globally, acting locally. As such, the NCPC is one of the dti's vehicles to make sustainable development a reality. ●

By Marba Visagie, Deputy Director **the dti**: Standards and Environment

Contribution Article

The Department of Environmental Affairs and Tourism, in collaboration with the National Cleaner Production Centre, has embarked on an awareness-raising campaign for Cleaner Production at Provincial Environment Authorities.



environment & tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

The aim of the workshops is to heighten awareness of Cleaner Production (CP) at Provincial and Local Government level. The workshops are also aimed at assessing CP capacity and existing CP initiatives in the provinces and local authorities.

To date, workshops have been conducted in the Eastern Cape, Free State, Mpumalanga, Northern Cape and Limpopo Provinces. A further workshop is planned for the North West Province in the current series of workshops. A further series of workshops targeted at local authorities is planned for next year.

The workshops have been very successful with good participation from both provincial and local authorities. The workshops focussed on introducing the concept of CP,

outlining the process of developing a National Cleaner Production Strategy for South Africa, and considering the status of CP in the country and

in the respective provinces, with specific focus on industry and government initiatives. The workshop participants were also introduced to the goals, activities and other organisational and operational aspects of the National Cleaner Production Centre.

As a result of the awareness-raising workshops, there is a growing understanding and appreciation of Cleaner Production and its role in pollution and waste management among workshop participants.

The workshops have also generated a keen interest in the concept of Cleaner Production among workshop participants, with the result that some of the provinces have requested further training on CP. The National Cleaner Production Centre conducted further training for officials of the Environmental Education Section of the Mpumalanga Department of Agriculture and Land Administration. ●

By Sylvester Mokoena, Deputy Director (acting) DEAT: Cleaner Production

Case Studies

NCPC ASSISTS FFS REFINERS AND UNITED NATIONAL BREWERIES

CASE STUDY 1: FFS REFINERS

Background

FFS was initially established in response to South Africa's changing energy needs during the 1970s. The former objective of the company was to develop firing systems capable of handling unconventional fuels to process waste and other materials into quality marketable fuels.

FFS's Durban-based production operation has comprehensive processing facilities and is capable of accepting virtually any oil-based feedstock; such as ship slops, industrial used oils and refinery by-products for the manufacture of liquid heating

fuel products. This facility processes approximately 36 000 - 48 000 tons of used oil per annum. At the end of 1999, FFS reinforced its proactive approach to the protection of the environment and sustainable development by obtaining ISO 14001 certification.

Challenge

One of the major challenges faced by FFS with the adoption of the ISO 14001 environmental management system was the issue of continuous process improvement, to reduce the impact of their process and products on the environment. By adopting the CP approach companies are able to address the issue of "continuous improvement".

Solution

In March 2004 the NCPC conducted a Cleaner Production Quick Scan Assessment of FFS Refiners Teakwood Road Processing Facility. The Quick Scan Assessment identified opportunities for energy recovery and emulsion phase separation. These areas were investigated in more detail through carefully planned and executed student projects. The following solutions have already been implemented by FFS:

- Installation of a pinch heater to recover energy from the forced feed evaporator to preheat the feed oil into the evaporator from 60°C to 100°C.
- Sourcing of more sensitive emulsion interface detection apparatus to obtain a better split at the water and oil emulsion interface results.

Results

The assessments have resulted in the following savings and impact for FFS:

- Installation of an energy pinch heater has resulted in savings of R252 000 per annum (R21 000 per month) from reduced boiler fuel consumption.
- Installation of a new technology interface detector for the emulsion phase separation resulting in savings of approximately R950 400 per annum (R79 200 per month) from reduced boiler fuel consumption.

Thus a total calculated saving of R1 202 400 due to CP intervention.

"Cleaner Production is not only a social responsibility but if the challenge is met with innovation and science it can also add value to the bottom line," remarked the CEO of FFS Refiners, Mr Don Hunter. ●

CASE STUDY 2: UNITED NATIONAL BREWERIES OF SOUTH AFRICA (PTY) LTD

Background

United National Breweries was established by a Black Economic Empowerment Consortium from the previously state-owned National Sorghum Breweries, to meet the rising demand for sorghum beer. There are currently 10 breweries, situated in Gauteng, Eastern Cape and KwaZulu-Natal. United Breweries produces approximately 400 million litres per annum. In May 2003, the NCPC-SA approached UNB's Phelindaba production facility to take part in the student training programme in conjunction with the CSIR and Austrian counterpart consultancy, Stenum.

Challenge

Due to the rising demand for sorghum beer, the challenge was to get higher production volumes from the factory by adopting cost effective methods.

Solution

A walk-through assessment and student experiential training programme was carried out using the in-plant assessment methodology. The assessment covered the following points:



Product Waste

- Identification and quantification of water losses;
- Minimising the spillage at filling points due to the frothing of beer.

Results

The company has implemented recommended water reduction options both from the NCPC and in-house initiatives. The results have shown a net reduction from 3,611 water/beer to 3,111 water/beer between July 2003 and July 2004. This is equivalent to a saving of 14% in water consumption and a water and effluent saving of R273 000 per annum (R22 750 per month). The work is being followed up with evaluations of cleaner production opportunities for the following:



Clean Containers

- Boiler house;
- Redesign of the nozzle at the filling locations.

The reason for success of the project, according to Mr van Vyver, is:

"The NCPC team focuses on the product and not the equipment," said Mr Van Vyver. ●

CTELc

As of January 2006, the Clothing and Textile Environmental Linkage Centre (CTELc) will be incorporated within the National Cleaner Production Centre hosted by the CSIR at the Materials Science and Manufacturing operating unit in Cape Town. This was officially announced at the CTELc farewell function that was held at the CSIR convention centre in Pretoria.



cleaner production practices in the textile environment in South Africa.

The incorporation of CTELc into the NCPC is seen as part of the methodology of forming sector-specific programmes within South Africa.

Rebranding of CTELc will occur in the near future to align CTELc with NCPC.

CTELc, a division of the Cleaner Textile Production Project (CTPP), was developed in response to initiatives by the Department of Environmental Affairs and Tourism (DEAT) as well as the Department of Trade and Industry (the dti). The project was funded by the Danish Government for a five year term ending December 2005, and it is aimed at promoting

CTELc has made significant progress in increasing awareness on environmental issues within the textile pipeline. As a result of the successes behind the NCPC and CTELc, the dti sees this merger as an opportunity for the South African textile industry to increase its competitiveness and productive potential through building up national capacity in cleaner production. ●



Garnets designed by Tswane University of Technology students from environmentally friendly fabrics which were showcased at the CTELc farewell function.

Upcoming Events

International Council For Local Environmental Initiatives (ICLEI) WORLD CONGRESS 2006 FOR CITIES AND LOCAL GOVERNMENTS

The ICLEI 2006 Congress will take place in Cape Town, South Africa from 27 February - 3 March 2006. The congress will focus on strategies for sustainability, with a special focus on poverty alleviation, and assessing the progress made by local governments in implementing the millennium development goals and the implementation plan of the 2002 World Summit on Sustainable Development.

The congress will provide a platform for interaction between ICLEI members, local governments, United Nations agencies, financial institutions, donors, businesses, NGOs and other partners working towards achieving local sustainability. For more information on the ICLEI Congress visit www.iclei.org

African Hydropower and Sustainable Development Conference

Date: 3-6 March 2006, Venue: Sandton Convention Centre. For more info go to: www.dme.gov.za

Background: Please note that the above conference will be hosted by the DME and DWAF at the Sandton Convention Centre, JHB and will be an African - wide conference to determine Africa's position on hydropower and promote sustainable use of energy on the continent. Focus will be on hydropower and sustainable development.

GALA EVENING

On 22 November 2005, NCPC held their end of year gala dinner at the Botanical Gardens in Pretoria. It was a night filled with nothing but festive cheers.



Marba Visagie (**the dti**) and Christina Golino, Development Bank of Southern Africa (DBSA)



Sabine Staffelmyr (Austrian Embassy) and Pat Fourie (CTELC)



From L-R: Imameleng Mothebe (**the dti**), Tshifhiwa Madima (**the dti**), Hwalani Maanda (NCPC) and Mboneni Muofue (Department of Science and Technology)



Thomas Bürki (UNIDO Consultant) and Rebeditsoe (Budu) Manaka (CTELC)



Thanyani Malange (NCPC) and Lwazikazi Tyani (Department of Minerals and Energy)



Clyff Ward (Singer) and Ndivhuho Raphulu (NCPC)



Kevin Cilliers (NCPC), Vedika Singh (NCPC), Elise Loubser (CSIR)



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Cleaner Production (CP) is the continuous application of an integrated preventive strategy for modifying processes, products, and services to increase eco-efficiency and reduce risks to humans and the environment

Benefits of cleaner production

- CP reduces costs
- CP increases productivity, competitiveness and quality
- CP improves legal compliance
- CP creates innovation
- CP motivates employees
- CP benefits the environment

Services offered

- Sourcing and transfer of CP tools and best practice
- CP advocacy and promotion
- Analysis, advice, information and policy support
- Training and capacity building
- Project management and facilitation of key CP initiatives
- Facilitate the transfer of Environmentally Sound Technologies (EST)
- Cleaner Production assessments.