

Ngolwazi oluthe vetshe nceda utyelele u-www.wcapeenergy.net

INkqubo yoLawulo lwaMandla oMbane aCocekileyo aseNtshona Koloni iXhaswa yi-Ofisi yooNozakuzaku baseBhritani de ibe ngu-2010 ibambisene naMandla oMbane aLondolozwayo ase-Afrika (Sustainable Energy Afrika) kunye neSebe leMicimbi yokusiNgqongileyo kunye noYilo loPhuhliso. INkqubo ijolise ekuphuhliseni umgaqo-nkqubo wamandla ombane alondolozwayo kunye nemisebenzi yamandla ombane owoneleyo kwiPhondo leNtshona Koloni.



INtshona Koloni: ikhaya elilondolozayo labo bonke



British High Commissioner





IProfayili yaMandla oMbane yaseNtshona

© Febuwari 2008

Imifanekiso ngu-Mark Lewis

Ulungiso kunye nemifanekiso: yi-dotted line design

Olu xwebhu lushicilelwe kwphepha elilungileyo kokusingqongileyo

I-PROFAYILI YAMANDLA OMBANE YASENTSHONA KOLONI

Uninzi lwe-kharbondioxide oluphuma ekusetyenzisweni kwamandla ombane kwiphondo luvela kuveliso lombane, lulandelwe kukusetyenziswa kwepetroli kunye nedizile. Ushishino lolona lingumsebenzisi omkhulu wombane kwiphondo, lulandelwe licandelo leendawo zokuhlala kuze ezorhwebo kunye norhulumente.

Icandelo	litoni ze-CO2 eziliwaka/ ngonyaka	i-% yaxa ziphelele
Ushishino	15,956	47.3%
EzokweMba imigodi nokweMba amaTye	751	2.2%
Ezothutho	7,529	22.3%
Ezolimo	2,045	6.1%
Iindawo zokuhlala	5,224	15.5%
Urhwebo kunye neeNkonzo zikaRhulumente	2,259	6.7%
Kuphelele	33,764	100%

Uluhlu loku-1: Umzekelo weKharbon wokusetyenziswa kwamandla ombane licandelo eNtshona Koloni (2004)

Amafutha	litoni ze-CO2 eziliwaka/ ngonyaka	% of total
Umbane	18,311	54.2%
Ipetroli	4,711	14.1%
Iparafini namafutha ejethi	145	0.4%
Idizile	3,643	10.8%
I-oli yamafutha	642	1.9%
I-LPG	375	1.1%
Amalahle	4,513	13.4%
Okunye	1,366	4.0%
Kuphelele	33,766	100%

Uluhlu lwesi-2: Umzekelo weKharbon wokusetyenziswa kwamandla ombane ngamafutha weNtshona Koloni (2004)

UNIKEZO LWAMANDLA OMBANE ENTSHONA KOLONI



Intshona Koloni iluthenga e-Eskom uninzi lombane wayo, omninzi kuwo uvela koomatshini bamandla ombane avela emalahleni kwenye indawo elizweni (kakhulu uvela eMpumalanga). Inxenywe yombane wethu yenziwa kwingingqi ize isasazwe kwisizwe, kuqukwa namandla ombane avela kwi-Koeberg Nuclear Power Plant, i-Acacia Gas Turbines, i-Palmiet Pumped Storage Facility kwaye umthamo omncinane uvela kwi-Klipheuwel Demonstration Wind Farm. IsiXeko saseKapa naso sivelisa isixa esincinane sombane nge-Steenbras Pumped Storage Facility kunye nakwiinjini ezijikelezayo zegesi zengingqi.

Nangona i-Eskom inoyilo olusebenzayo ololuliweyo lokunceda ukukhusela umbane eNtshona Koloni, kukho uluhlu lwezinye iindlela ekunokukhethwa kuzo ezinokukhetha, kuqukwa nokwenza kohlukane unikezo oluxutyiweyo kunye nokwenza banzi iindlela ekunokukhethwa kuzo zokwenza amandla ombane.

I-PROFAYILI YAMANDLA OMBANE YASENTSHONA KOLONI

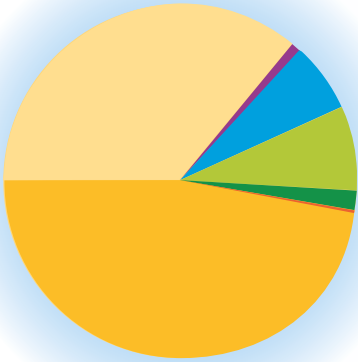
Ukusetyenziswa kwamandla ombane

Ngo-2004, malunga nezigidi ezingama-250 GJ zamandla ombane zasetyenziswa eNtshona Koloni. Ngo-2020, ukuba ngaba uqoqosho luyaqhuba lukhula njengoko kulindelekile, kuthelakelelwa ukuba imfuno iya kunyuka iye kwizigidi ezingama-375 GJ, ngaphandle kokuba iipateni zokusetyenziswa kwamandla ombane zitshintsha kakhulu.

Njengoko kubonisiwe kuMfanekiso woku-1, amacandelo ezoshishino kunye nothutho ngabona basebenzisi bamandla ombane bakhulu. Edityanisiwe, la macandelo mabini enza ama-80% okusetyenziswa kombane uphelele kwiphondo.

Icandelo lezothutho lixhomekeke kakhulu kwipetroli, ngexa icandelo lezoshishino lingumsebenzisi omkhulu wombane, kwaye lingumsebenzisi wepetroli wesibini omkhulu.

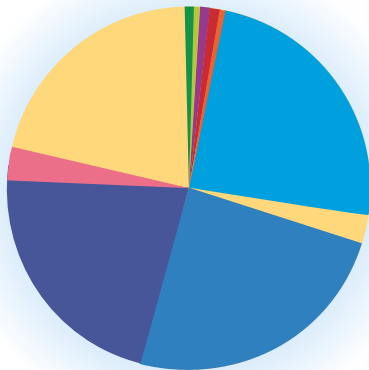
UMfanekiso woku-1: UkuSetyenziswa kwaMandla oMbane eNtshona Koloni liCandelo (2004)



- EzoThutho: 34.9%
- EzokweMbiwa: 1.7%
- EzoLimo: 5.1%
- IiNdawo zokuHlala: 7.9%
- Urhwebo: 3.2%
- Urhwebo: 3.2%
- EzoShishino: 46.9%

Okwangoku iNtshona Koloni isebenzisa uluhlu lwamafutha ukuzalisekisa iifundo zamandla ombane zabantu kunye namashishini ayo. Eyona mfuno yamandla ombane inkulu yokugqibela yeyamafutha alulwelo ngenxa yokusetyenziswa kwawo kwicandelo lezothutho, kodwa kwakhona nakwezoshishino, urhwebo, ezolimo, kwezokwembiwa kunye nakwicandelo leendawo zokuhlala. Umthwali wamandla ombane olandelayo ongundoqo wokugqibela ngumbane ulandelwa ngamalahle kunye nezixa ezincinane zemithi.

UMfanekiso we-2: UkuSetyenziswa kwaMandla oMbane kuPhelele ngo-2004



- IMithi: 2%
- I-Petroleum coke; 1%
- IGesi yendalo: 2%
- I-LPG: 2%
- Paraffin: 1%
- I-Gasolini (ipetroli); 24%
- I-Oli yamafutha: 4%
- Umbane; 25%
- IDizile (isalfa esezantsi); 17%
- I-Oli ekrwada: 0%
- AmaLahle (anetha): 17%
- I-Ethanol: 0%
- IDizile (isalfa esezantsi) kakhulu: 0%
- I-Biodiesel: 0%
- Biodiesel: 0%

Umxube wamafutha nolwelo kukho ipetroli kakhulu kuwo (esetyenziswa kakhulu kwicandelo lezothutho) ulandelwe zizixa ezikhulu zedizile (esetyenziswa nakwamanye amacandelo angaphandle kwawothutho ngokunjalo) unezixa ezincinane ze-oli yamafutha, i-LPG nekerosene (iparafini)

Ushishino (47% yokusetyenziswa kuphelele)

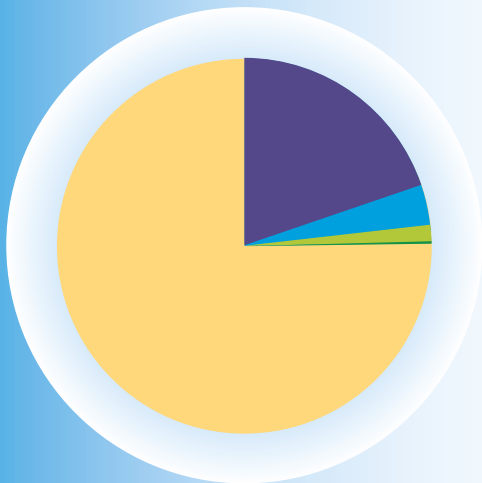
Eli candelo lingumsebenzisi omkhulu wombane kwaye lingumsebenzisi omkhulu wesibini wamafutha emva kwezothutho.

Ezothutho (35% yokusetyenziswa kuphelele)

Uninzi lwamafutha alulwelo olusetyenziswa eNtshona Koloni lusetyenziswa kwicandelo lezothutho.

Imfuno yamandla ombane kwicandelo lezothutho kugcwele kulo kakhulu usetyenziso ngabakhweli babucala, ngoninzi lwemfuno eseleyo yamandla ombane eyenziwa licandelo lezothutho likawonke-wonke labakhweli.

UMfanekiso we-3: Ukusetyenziswa kwamandla ombane icandelwana lezothutho kwiNtshona Koloni ngo-2004



- UMkhweli – wabucala: 74.8%
- UMkhweli – uwonke-wonke: 19.8%
- INtlawulelo yothutho – ngesiporo: 0.1%
- INtlawulelo yothutho – emgaqweni: 4%
- URhulumente: 1.2%

Kwiindawo zokuHlala (8% yokusetyenziswa kuphelele)

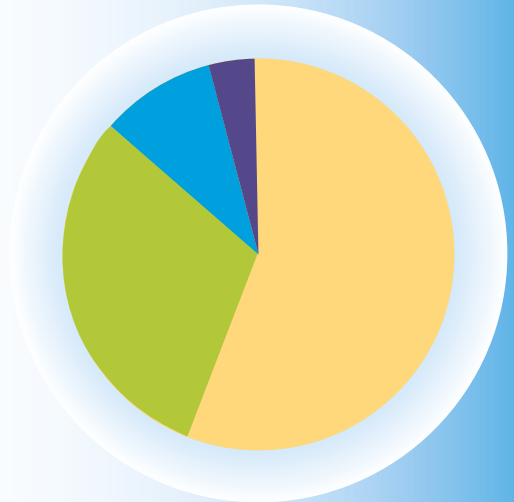
Uninzi lwabantu luhlala kwiindawo zasezidolophini kwicandelo elinengeniso esezantsi elenza inxenye enkulu. Ngexa ngaphezulu kwama-85% abemi basezidolophini behlala kwizindlu ezinombane, kuphela ngama-65% emizi yasemaphandleni enombane.



Icandelo lasezidolophini elinengeniso ephakathi ukuya kwephezulu lelona lisebenzisa kakhulu umbane kwiphondo nangona imizi esezidolophini enengeniso esezantsi imininzi kakhulu. Oku kwenziwa kukusetyenziswa kwamandla ombane kwimizi enengeniso ephakathi ukuya kwephezulu xa kuthelekiswa nemizi enengeniso esezantsi. Imizi yasemaphandleni yenza isabelo esincinane kakhulu ngenxa yokuba zincinane iindawo ezisemaphandleni kwiphondo.

UMfanekiso wesi-4: Ukusetyenziswa kwaMandla oMbane licandelwana kwicandelo lendawo zokuhlala eNtshona Koloni 2004

- Abasezidolophini abanengeniso ephakathi ukuya kwephezulu: 56.3%
- Abasemaphandleni abanengeniso esezantsi: 3.1%
- Abasemaphandleni abanengeniso ephakathi ukuya kwephezulu: 7.8%
- Abasezidolophini abanengeniso esezantsi: 32.8%



EzoLimo (5% yokusetyenziswa kuphelele)

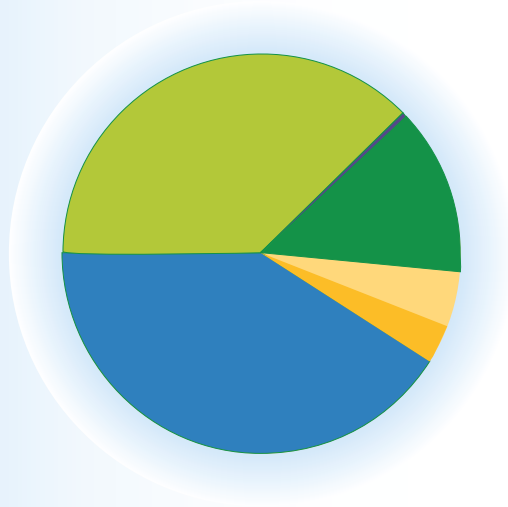
Intshona Koloni ityebile kokuphathelene nezolimo kunye neentlanzi kwaye yiloo nto ke iyenye yeendawo ezibalulekileyo zokutya eMzantsi Afrika.

Idizile ngawona mafutha abalulekileyo kwezolimo kodwa ke umbane uyakhula ngokubaluleka ngenxa yokwenyuka kokuxhotyiswa ngoomatshini.



UMfanekiso wesi-5: Ukusetyenziswa kwaMandla oMbane ngamafutha kwicandelo lezolimo eNtshona Koloni (2004)

- Idizile: 40.6%
- Umbane: 36.3%
- I-oli yamafutha: 0.2%
- Amalahle (anetha): 15.8%
- Ipetroli; 4.5%
- Iparafini; 2.7%





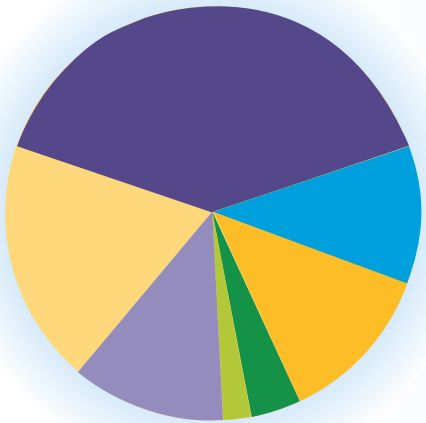
URhwebo noRhulumente (4% yokusetyenziswa kuphelele)

Icandelo lezorhwebo linezakhiwo zee-ofisi, iihotele, amaziko ezimali, iivenkile, izibonelelo zemfundo, izibhedlele kunye neendawo zokuzonwabisa

Umbane uphelele osetyenziswa kweli candelo uye wohlukaniswa ngale ndlela ilandelayo: VAC 43%, ukukhanyisa 26% (1/3 ziyakhanya 2/3 ziyabengezela), ukufaka efrijini 5.8%, ukufudunyezwa kwamanzi 3%, ukupheka 0.6%, kunye nokunye 12.8%.

Ukukhanyisa ne-HVAC (ukufudumeza, ukungenisa umoya nokupholisa) kwenza uninzi lwamandla ombane asetyenziswayo kwicandelo lorhwebo. Izakhiwo zikaRhulumente (ezengingqi, iphondo nezesizwe) jikelele zineempawu zamandla ombane ezifanayo njengezakhiwo zorhwebo.

UMfanekiso wesi-6: Ukusetyenziswa kwamandla ombane ngumsebenzisi osekugqibeleni kumacandelo aseNtshona Koloni orhwebo nakarhulumente



- Ukukhanyisa: 21%
- I-VAC: 35.8%
- Ukufudunyezwa kwendawo: 11.4%
- Ukufudunyezwa kwamanzi: 12.1%
- Ukufaka efrijini: 4.8%
- Ukupheka: 2.3%
- Okunye: 12.5%



Okwezemiwa (2% yokusetyenziswa kuphelele)

IPhondo leNtshona Koloni ayilo phondo lityebileyo kwizemiwa, ingakumbi kuba linezezemiwa ezivulelekileyo kunye nemisebenzi yesanti enzima yasebhitshini.

Amafutha angundoqo asetyenziswa kwezemiwa ayengowombane elandelwa ngokusondeleyo yidizili.

Figure 7: Energy use by fuel for the Western Cape mining sector (2004)

- Idizili: 42%
- Igesi yendalo: 0.3%
- Iparafini: 7.6%
- Ipetroli: 1.4%
- I-oli yamafutha: 0.6%
- Umbane: 48.1%

