



INTEGRATED RESOURCE PLAN

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**mineral resources
& energy**

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Lenaanefoko la Mareo

Lereo/Khutshwafatso	Tlhaloso
Lefapha la Dikgwa, Tshwaro ya Ditlhapi le Tikologo	<i>Ke lefapha le le neilweng boikarabelo jwa go naya baagi tshwanelo ya go nna le tikologo e e seng kotsi mo botsogong jwa bone kgotas mo boitekanelong jwa bone le go dira gore tikologo ya bone e sirelediwe dikokomana tsa ga jaanong le tse di tlang ka dikgato tsa semolao tse di kgonang go fitlhelelwa.</i>
Lefapha la Ditsompelo tsa Diminerale le Eneji	<i>Ke lefapha la puso le le neilweng boikarabelo jwa go tlhomamisa gore le tlamela ka eneji ka mokgwa o o sireletsegileng le o o kgonang go itsetsepela go tlisa tlhabololo ya loago le ikonomi.</i>
Selekanyo se se Leng Teng sa Eneji	<i>Peresente ya selekanyo-godimo sa eneji seo bodirelo jo bo fetlhang maatla a motlakase bo kgonang go tlamela mafaratlhatlha a tlamelo ya motlakase ka sone ka nako ya kgaogo ya motlakase e e rulaganyeditsweng kgotsa e e sa rulaganyediwang.</i>
Gase ya Leokwane le le Phepa la Haeterojene	<i>Thulaganyo ya tlhagiso ya gase ya haeterojene ka metswedi ya tlhagiso ya eneji e e phepa.</i>
Leano le le Kopantsweng la Didirisiwa	<i>Leano la go oketsa go fetlha ga selekanyo sa motlakase o go tlamelwang ka one wa tlhwatlhwa-tlase o o kgonang go tlamela botlhe lobaka lo lo leele le go tsenyeletsa pholisi ya puso.</i>
Go Fetogela Kwa Maatleng a a Phepa a Motlakase	<i>Go fokotsa khabone e ntsi thata e e fetlhwang ke tsamaiso e e fetlhang motlakase gore e nne e e kwa tlase</i>
Bodirelo jwa Lobaka lo lo Leele jwa Phetlho ya Motlakase	<i>Go dira ga mafaratlhatlha a a tlhomilweng a nyutlelia go pota ka kwa ga nako e a e beetsweng, ka sekai, ditumalano tsa laesense ya one, mokgwa o a dirilweng ka one, ditekanyetso tsa one, laesense kgotsa melawana ya one, tse di amogetsweng morago ga tshekatsheko ya tshireletsego ya one, a go akanyeditsweng dithulaganyo tse di ka lekanyetsang lobaka lwa go dira ga one kgotsa dipopego tsa one, ditsamaiso tsa one, le dikarolo tsa one.</i>
Ditekanyetso-Potlana Tsa go Ntshediwa ga Digase mo Moweng	<i>Melawana e e gatisitsweng mo teng ga Molao wa Bosetšhaba wa Botsamaisi jwa Tikologo; Molao wa Boleng jwa Mowa (NEMAQA) wa bo 39 wa ka 2004.</i>
Balaodi ba Bosetšhaba ba Eneji ba Aforika Borwa	<i>Bathati ba ba neilweng taolo ya go laola motlakaseau, gase e e tsamaisiwang ka diphaephe ke madirelo a peteroliamo e e tsamaisiwang ka diphaephe go ya ka Molao wa Taolo ya Motlakase, wa ka 2006 (Molao wa bo 4 wa ka 2006), Molao wa</i>

	<i>Gase, wa ka 2001 (Molao wa bo 48 wa ka 2001) le Molao wa Peteroliamo e e Tsamaisiwang ka Diphaephe, wa ka 2003 (Molao wa bo 60 wa ka 2003).</i>
Balaodi ba Bosetšhaba ba Nyutlelia	<i>Setheo sa semolao se se tlhomilweng go ya ka Molao wa Bosetšhaba wa Taolo ya Nyutlelia wa bo 47 wa ka 1999.</i>
Komiti ya Bosetšhaba ya Mathata a Eneji	<i>Komiti e e tlhometsweng go okamela le go akofisa maiteko a puso a go fokotsa kgaogo ya motlakase.</i>
Boemo jwa Leano la Go Boloka Tekatekano ya Digase mo Loaping	<i>Tekatekano fa gare ga selekanyo sa digase tse di ntshediwang mo moweng le selekanyo sa tse di fokodiwang fa di tswa kwa loaping. Gantsi boikaelelo jwa teng ke go fokotsa pele bontsi jwa khabone ka moo go kgonegang ka gone e e ntshediwang mo moweng mmogo le boloka tekatekano ga digase tse di salelang fa tse dingwe di sena go fokodiwa.</i>
Enjene e e Bulegileng Fetlhang Maatla a Motlakase ka Gase	<i>Enjene e e fetlhang maatla a motlakase ka go gotetsa leokwane/gase ka nako ya maemo a tshoganyetso.</i>
Lenaneo la Theko ya Motlakase o o sa Fetlhweng ka Ditukisi la Setlamo se se Ikemetseng ka Nosi sa Tlhagiso ya Motlakase	<i>Sejanaga se se tlhometsweng go reka motlakase go tswa metswedding e e fetlhang motlakase e seng ka ditukisi le e o sa e fetlhweng ka ditukisi go tswa kwa setheong sa poraefete.</i>
Lenaneo la Theko ya Motlakase le le Okobatsang Go Tlhaga ga Dikotsi la Setlamo se se Ikemetseng ka Nosi sa Tlhagiso ya Motlakase	<i>Lenaneo le le tlhamilweng ke DMRE go diragatsa ditaello tsa Tona tse di tshalosiwang mo kaseteng ya IRP 2019.</i>
Madirelo-Potlana a Poloko ya Motlakase	<i>Madirelo a a fetlhang maatla a motlakase a a kwa magaeng, kwa mafelong a kgwebo kgotsa kwa mafelong a diintaseteri, ao kwa go one gantsi motlakase o dirisiwang e bile o ka nna wa romelwa kwa mafaratlhatlha a tlamelo ya motlakase.</i>
Tlhaelo ya Selekanyo se se Tlhokegang sa Motlakase Maatla a Motlakase a Go Nang le Bothata Jwa Go Tlamela ka One	<i>Selekanyo sa motlakase se se sa kgoneng go fitlhelwa ka ntlha ya tlhaelo ya one kwa batlameding ba one</i>
Tshekatsheko ya Selekanyo sa Maatla a Motlakase a Sefetlha-Motlakase se Kgonang go a Tshola	<i>E bakwa ke kgato e e latelang ya go iteka lesego (bid window)mme e raya selekanyo sa maatla a motlakase o o fetlhiwang o o ka kgonang go tsholwa ke mafaratlhatlha a tsamaiso ya thomelo ya motlakase ka nako epe fela le kwa lefelong lepe fela kwantle ga go ama thata go dira sentle ga mafaratlhatlha a tlamelo ya</i>

	<i>motlakase le kwa ntle ga go tlhoka ditlhabololo tse dikgolo tsa mafaratlhatlha a motlakase.</i>
Molawana wa Mafaratlhatlha a Tlamelo ya Motlakase a Aforika Borwa	<i>Boikaelelo jwa Molawana wa Mafaratlhatlha a Tlamelo ya Motlakase ke go dira gore go nne le tirisano-mmogo ya batsayakarolo mo intasetering eno ya go dirisa tsamaiso ya thomelo ya motlakase le tiriso ya tsamaiso e e golaganeng ya maatla a motlakase.</i>

Dikhutshwafatso le Mafoko a a Bopilweng ka Ditlhakaina

BESS	Battery Energy Storage System (Tsamaiso ya Beteri e e Bolokang Maatla a Motlakase)	MTSAO	Medium Term System Adequacy Outlook (Ponelopele ya Maatla a a Lekaneng mo Lobakeng lo lo mo Magareng)
CCGT	Closed Cycle Gas Turbine (Enjene e e Tswalegileng e e Fetlhang Maatla a Motlakase ka Gase)	MW	Megawatt
CCUS	Carbon Capture and Utilisation Storage (Bobolokelo jwa Go Tshwara Khabone le Tiriso ya Yone)	NEMAQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (Botsamaisi jwa Bosetšhaba jwa Tikologo: Molao wa Boleng jwa Mowa, wa ka 2004 (Molao wa bo 39 wa ka 2004))
CO ₂	Carbon Dioxide	NERSA	National Energy Regulator of South Africa (Balaodi ba Bosetšhaba ba Eneji ba Aforika Borwa)
COD	Commercial Operation Date (Letlha la Ditiro Tsa Kgwebo)	NNR	National Nuclear Regulator (Balaodi ba Bosetšhaba ba Nyutlelia)
CSP	Concentrating Solar Power (Maatla a Mogote wa Letsatsi a a Kopanelang Felo go le Gongwe)	PF	Pulverised-fuel coal technology (Thekenoloji ya go thuga magala a a dirilweng leokwane)
DFFE	Department of Forestry, Fisheries and the Environment (Lefapha la Dikgwa, Tshwaro ya Ditlhabi le Tikologo)	PV	Photovoltaic (Motlakase o o Dirisang Mogote wa Letsatsi)
DMRE	Department of Mineral Resources and Energy (Lefapha la Ditsompelo tsa Diminerale le Eneji)	REIPPPP	Renewable Energy Independent Power Producer Procurement Programme (Lenaneo la Theko ya Motlakase o o sa Fetlhweng ka Ditukisi la Setlamo se se Ikemetseng ka Nosi sa Tlhagiso ya Motlakase)
DSM	Demand Side Management (Taolo ya Selekanyo se Motlakase o Tlhokwang ka Sone)	RMIPPPP	Risk Mitigation Independent Power Producer Procurement Programme (Lenaneo la Theko ya Motlakase le le Okobatsang Go Tlhaga ga Dikotsi la Setlamo se se Ikemetseng ka Nosi sa Tlhagiso ya Motlakase)
EAF	Energy Availability Factor	RSA	Republic of South Africa

	(Selekanyo se se Leng Teng sa Eneji)
EIA	Environmental Impact Assessment (Tshekatsheko ya Diphelelo Tsa mo Tikologong)
EC	Eastern Cape Region (Kgaolo ya Kapa Botlhaba)
ESI	Electricity Supply Industry (Intaseteri ya Tlameo ka Motlakase)
FBC	Fluidised Bed Combustion coal technology (Thekenoloji ya Go Tukisa Ditukisi Tse di Thata Go Nna Sedi)
FGD	Flue Gas Desulphurisation (Go Tlosa Sulefura mo Digaseng Tse di Kgwelwang mo Moweng)
GCCA	Generation Capacity Connection Assessment (Tshekatsheko ya Kgokagano ya Sefetlha Motlakase)
GDP	Gross Domestic Product (Dithoto Tsotlhe Tsa Naga)
GW	Gigawatt (sekete sa maatla a motlakase)
H ₂	Hydrogen Gas (Gase ya Haeterojene)
KNPS	Koeberg Nuclear Power Station (Setešene sa Maatla a Nyutlelia sa Koeberg)
IRP	Integrated Resource Plan (Leano le le Kopantsweng la Didirisiwa)
LTO	Long-Term Operation (Bodirelo jwa Lobaka lo lo Leele jwa Phetlho ya Motlakase)
MES	Minimum Emission Standards (Ditekanyetso-Potlana Tsa go Ntshetsa Digase mo Moweng)

	(Repaboliki ya Aforika Borwa)
SAGC	Molawana wa Mafaratlhatlha a Tlameo ya Motlakase a Aforika Borwa
SMR	Small Modular Reactor (Metšhini-Potlana e e Fetlhang Maatla a Motlakase)
SSEG	Small-Scale Embedded Generation (Dijenereitara-Potlana Tsa Poloko ya Motlakase)
Tcf	Trillion cubic feet (Dikgato tsa dikubita le terelione)
TDP	Transmission Development Plan (Leanothabololo la Tsamaiso ya Maatla a Motlakase)
TWh	Terawatt hour (Maatla a a dirisiwang lobaka lwa ura)
WC	Western Cape region (Kgaolo ya Kapa Bophirima)

1.....|

RP go ya ka Maemo

- 1.1. Leano la Go Bona Selekanyo sa Tlhaelo ya Motlakase (Integrated Resource Plan [IRP]) ke leano le le tla nnelang ruri le go lebeletsweng gore le tlhabololwe gangwe le gape ka ntlha ya go fetoga ga maemo.
- 1.2. Lebaka-legolo la IRP ke go tlhomamisa gore ga go nne le tlhaelo ya tlamelo ya motlakase o o tlhokegang ka go dira gore go nne le tekatekano fa gare ga selekanyo se o abiwang ka sone le se o tlhokwang ka sone, mme go ntse go akanyediwa tikologo le ditshenyegelo tsa go tlamela ka one.
- 1.3. Aforika Borwa e tswelela pele go dirisa maatla a motlakase a a tswakantsweng go tswa metsweding e e farologaneng e e tla tlamelang ka eneji e e se kitlang e tlhaela le go tlhomamisa gore go ikobelwa leano la yone la phokotso ya digase tse di ntshediwang mo moweng. Mokgwa o Aforika Borwa e o dirisang wa go tlhomamisa go se tlhaele ga eneji o dumalana le mekgwa ya boditšhabatšhaba le ditlhabologo tse di nnang teng.

1.3.1. Magala

Magala a tswelela pele go nna le seabe se se botlhokwa sa go fetlha motlakase mo Aforika Borwa. E re ka re na le magala a mantsi mo nageng ya rona, go a tlhokega gore go akanyediwe tiriso ya dithekenoloji tse di atlegang thawta le tsa magala a a phepa.

Gore seno se kgone go fitlhelwa Lekgotla la GeoScience le le dirisanang mmogo le World Bank le dira patlisiso ya Carbon Capture Utilisation and Storage (CCUS) e leng Bobolokelo jwa Go Tshwara Khabone le Tiriso ya Yone mo setsheng kwa Leandra kwa mmasepaleng wa Govan Mbeki.

Ka ntlha ya dipeeletsomadi tse dintsi tse di tlhokegang gore thekenoloji ya CCUS e tswedisetswe pele, Aforika Borwa e tshwanetse gore ka metlha e gagamalele ditirisano-mmogo tse di logetsweng maano le mekgatlho ya dinaga di sele le dinaga tse di dirileng kgatelopele mo go tlameng dithekenoloji tsa magala a a phepa.

1.3.2. Nyutlelia

Maatla a nyutlelia ke motswedi o o botlhokwa wa eneji e e phepa wa go fetlha motlakase ka gonne a kgona go thusa dithekenoloji tse dingwe tsa eneji e e phepa go fokotsa digase tse di ntshediwang mo moweng tsa setheo se se fetlhang maatla a motlakase le go tlamela ka motlakase o o sa tlhaeleng jaaka motswedi wa maatla a motlakase o o rulaganyeditsweng go tlamela ka motlakase fa a tlhokega¹.

Go na le kgatlhego e e ntseng e gola mo lefatsheng lotlhe ya tiriso ya metšhini-potlana e e fetlhang maatla a motlakase (small modular reactors [SMRs]). Ka ntlha ya bonnye jwa yone, di SMR jaanong di bonwa mo mafelong a a sa tshwanelweng ke go nna le madirelo a magolo a a fetlhang maatla a nyutlelia jaaka mo dikgaolong tse di kgakala le dintshi tsa mawatle, tse di leng fa dintshing tsa mawatle le kwa mafelong a a kgakala. Go dirisiwa ga di SMR ka tsela le fa e ka nna efe go kgontsha gore go nne le ditsamaiso tsa maatla tsa mokgwa o o fetang o le mongwe, e leng tsa go kopanya nyutlelia le metswedi e mengwe e sle ya eneji, go akaretsa le motlakase o o sa diriseng ditukisi. Di SMR di ka dirisiwa ka go tsenngwa kgato ka kgato (lebelo le bogolo) go tsamaisana le selekanyo se se golang se eneji e tlhokwang ka sone.

Seteišene sa Koeberg sa Maatla a Motlakase se felelwa ke lobaka lwa go dira ga sone kwa bokhutlong jwa 2024. Go tla go phuthama ga maatla a nyutlelia fa go dirisiwa eneji e e tswakantsweng go tswa metsweding e e farologaneng, Aforika Borwa e dirile tshwetso ya yone ya go atolosa lobaka lwa go dira ga sefetlha motlakase le go atolosetsa lenaneo la maatla a nyutlelia mo isagweng. Eskom e atlegile ka go emisetsa jenereitara e e dirang ka mowa o o mogote gore e fetlhe maatla mo go Yuniti 1 kwa Seteišene sa Maatla a Nyutlelia sa Koeberg. Go tla dirwa tiro e e tshwanang go yuniti 2 se se tla dirang gore laesese ya Koeberg ya go dira e dire go feta lobaka lo e le diretsweng lwa dingwaga di le 40.

1.3.3. Gase

¹ Setheo sa Boditšhabatšhaba sa Maatla a Motlakase (International Energy Agency [IEA])

Gase e e tsenyang dithekenoloji maatla a motlakase ka mokgwa wa CCGT, CCGE kgotsa ICE e re thusa go fetofetoga le maemo go ya ka fa go tlhokegang ka gone go tlaleletsa motlakase o o sa fetlhweng ka ditutkisi.

Fa e santse e dirisiwa ka nakwana, tšhono e re nnang le yone ke ya go dira ditlhopho tsa go romela gase mo teng ga naga, metswedi ya gase ya lefelo la rona le ya kgaolo ya rona e tla nna le gase e e lekaneng go tlamela ka selekanyo sa yone se se ntseng se tthatloga sa go tlhokega ga yone.

Go na le kgonego e kgolo le tšhono malebana le seno ya go ribololwa ga motswedi wa gase wa Brulpadda mo Mokgatšheng wa Outeniqua wa Aforika Borwa, go ribololwa ga motswedi wa gase kwa porofenseng ya Foreisetata le ya Mpumalanga, gase e e mo seemong sa yone sa tlhago go tswa kwa Mozambique le Namibia, gase e e thagisiwang mo teng ga naga ya rona jaaka gase ya *methane* e e iphitlhileng ka fa tlase ga boalo jwa magala le gase e e tswang mo teng ga mafika a a ikadileng.

Go dirwa maiteko a go tshwarisana mmogo fa gare ga dinaga tse di mabapi e bile go dirwa le ditirisano-mmogo tsa go dirisa gase ya tlhago mmogo le go solegelwa molemo ke yone mo kgaolong ya SADC.

Go dirwa patlisiso ya tshekatsheko ya go bona bontsi jwa gase e e kgonang go ribololwa e e tswang mo teng ga mafika a a ikadileng, e e mo ditsheng tse di kgakala le mawatle le e e fa dintshing tsa mawatle mme e tshwanetse go akofisiwa.

Go nna le gase go re naya tšhono ya go simolola go dirisa CCGT le go dirisa madirelo a dienjene tse di bulegileng tse di fetlhang maatla a motlakase ka gase kwa Ankerlig (Saldanha Bay), Gourikwa (Mossel Bay), Avon (Ka fa Ntlhe ga Durban) ke kwa Dedisa (Coega IDZ) ka gase mo boemong jwa go dirisa disile.

1.3.4. Motlakase o o sa fetlhweng ka ditutkisi

Solar PV (Motlakase o o Dirisang Mogote wa Letsatsi), phefo le Maatla a Mogote wa Letsatsi a a Kopanelang felo go le gongwe (Concentrated Solar Power [CSP]) a a nang le bobolokelo a re naya tšhono ya go tswakanya maatla a motlakase a a tswang mo metsweding e e farologaneng, go

tlhagisa le go romela maatla a fetlhweng a motlakase le go tlamela ka motlakase o o tlang o sa tswe kwa mafaratlhatlheng a tlamelo ya motlakase. Dithekenoloji tse di sa fetlheng maatla a motlakase ka ditukisi le tsone di re naya tšhono e kgolo ya go tlhama diintaseteri tse disha tse di tlamelang ka motlakase.

Fa re leba kwa isagweng, go boleletswe pele gore mmara o o fetlhang motlakase o sa dirise ditukisi o tlile go gola fela thata jaaka fa maiteko a go tlogela go dirisa khabone a tswela pele mme metswedi e mesha ya tlamelo ka motlakase, jaaka haeterojene e phepa le gore tlhokego ya Dikoloi Tse di Dirisang Eneji e Ntšha (New Energy Vehicles [di NEV]), e tlile go gola.

Mo nageng ya rona, go simololwa ga tiriso ya maatla a a sa fetlhweng ka ditukisi go tlile go ntsifala ka bonako ka mananeo a poraefete a theko jaaka fa naga ya rona e ikaelela go se nne le tlhalelo ya motlakase le go fokotsa khabone mo madirelong a a tlamelang ka motlakase. Go lebeletswe gore palo ya Dijenereitara-Potlana Tsa Poloko ya Motlakase (Small-Scale Embedded Generation [SSEG]) le tsone di tlhatloge fela thata ka ntlha ya kgaogo ya motlakase le ditlhwatlhwa-godimo tsa motlakase.

1.3.5. Go Fetlha Motlakase ka Metsi

Ono ke motswedi wa bogologolo le o mogolo go e gaisa wa go fetlha motlakase kwantle ga go dirisa ditukisi, mme mokgwa ono o dirisa kelelo ya tlhago ya metsi go fetlha motlakase.

Dinoka tsa Aforika Borwa di na le bokgoni jwa gore go dirwe ka tsone diporojeke tsa go fetlha motlakase ka metsi. Balemi ba supile gore seno se a kgonega ka ka diporojeke tse di dirang ga jaanong.

Malebana le thomelo ya didirisiwa tsa go fetlha maatla a motlakase ka metsi mo teng ga naga, Aforika Borwa ga jaanong jaana e dira thomeloteng ya didirisiwa tsa go fetlha maatla a motlakase ka metsi go tswa kwa Mozambique (Cahora-Basa) ka kgonego ya go dira thomeloteng e nngwe gape ya didirisiwa tsa go fetlha motlakase ka metsi go tswa kwa Mpanda Nkuwa e leng porojeke e e santseng e agiwa ya go fetlha motlakase ka

metsi.. Gape Aforika Borwa e tsenetse Tumulano ya go tlhama Porojeke ya Grand Inga kwa Democratic Republic of Congo (DRC), e boikaelelo jo bongwe jwa yone e leng go romela motlakase kwa Aforika Borwa go kgabaganya DRC, Zambia, Zimbabwe le Botswana. Mo godimo ga tlhopho eno ya go fetlha motlakase go tlamela ka eneji e e phepa, dikgato tsa tlhabololo mo kgaolong di pateletsa gore go dirwe jalo, segolobogolo ka ntlha ya gore ga jaanong jaana go na le kgwebisano e nnye fela fa gare ga dinaga tseno, ka ntlha ya go bo go sena ditlamelwa tse naga e di tlhokang. Kgonego ya gore go nne le kgwebisano fa gare ga dinaga tsa SADC e kgolo thata ka gonne go ka direga gore e simolole kgwebisano ya tsa ikonomi.

Mme ke ga tlhago fela gore go tlotlwe ka matshwenyego ka ga dikotsi tse di amanang le porojeke ya mofuta ono. Boikaelelo jwa Aforika Borwa ga se go dira thomeloteng ya motlakase go tswa motswedding o le mongwe fa e setse ka motlakase o monnye, jaaka leano la gore e se ka ya wela mo kotsing ya go go e ikaegile fela ka motswedi o le mongwe fela ono wa go fetlha motlakase.

1.3.6. Bobolokelo

Go na le kamano ya tirisano mogo fa gare ga ditsamaiso tsa Mafaratlhatlha a Tlamelo ya Motlakase, bobolokelo jwa eneji, le dithekenoloji tse di sa diriseng ditukisi go fetlha motlakase mme e le tse di dirisang phefo le motlakase o o dirisang mogote wa letsatsi, e bile e le tse di sa direng ka dinako tsa fa motlakase o tlhokwa ka bontsi.

Tsamaiso ya ka gale ya motlakase e kgaoseditse ke tlhamo ya dithekenoloji tse di amanang le bobolokelo jwa motlakase, mme go ka tlhamiwa le didirisiwa tse dingwe gape tse di sa fetlheng motlakase ka ditukisi go sa kgathalesege kgang ya gore tlhagiso-motlakase ya tsone e ka tswa e le kwa tlase ka dinako tsa fa motlakase o tlhokega ka bontsi thata.

Dithekenoloji tsa bobolokelo jwa motlakase tse di akaretsang ditsamaiso tsa dibeteri, bobolokelo jwa eneji jwa kgatelelo ya mowa, bobolokelo jwa eneji jo bo dirisang leotwana le le dikologang, disele tse di fetolang leokwane go nna eneji, jj, ke ditlhangwa tse di rarabololang bothata jono, segolobogolo

mo Aforika Borwa mo go simolotsweng 6 000 MW ya motlakase o o fetlhiwang go sa dirisiwe ditukisi, mme tsamaiso ya motlakase ga e na sebaka se se lekaneng sa go boloka motlakase oo kgotsa ga se kgona go feto-fetoga le maemo.

1.3.7. Haeterojene

Ditheo Tsa Boditšhabatšhaba tsa Eneji (The International Energy Agency's [IEA]) 'Leano la Go Boloka Tekatekano ya Digase mo Loaping ka 2050' [4] di kaya haeterojene e e phepa (H₂) e le mongwe wa metswedi e e phepa ya eneji jaaka go dirwa phetogo ya gore go nne le tekatekano ya digase mo moweng.

Aforika Borwa e iponela melemo mengwe e le mmalwa ya go latelela ikonomi ya haeterojene. Melemo eno, gareng ga e mengwe, e akaretsa; bokgoni mo tirong ya Fischer-Tropsch, e leng tiro ya go fetolelwa ga digase tsa khabone le tsa haeterojene go nna seedi, diminerale tsa botlhokwa thata tse di tlhokegang tse di dirang leokwane la khabone e e kwa tlase, le metswedi ya eneji e e sa diriseng ditukisi.

Ka kgwedi ya Diphilane 2021, Aforika Borwa e ne ya rebola Leano la Go Nna Setšhaba se se Dirisang Haeterojene se se eteletsang kwa pele mekgele ya bosetšhaba le ya ditheo ya go dirisa khabone e e kwa tlase mo Aforika Borwa. Gape naga ya rona e rebotse Leano la go Gwebo ka Haeterojene e e Phepa (Green Hydrogen Commercialisation Strategy [GHCS]) le boikaelelo jwa lone e leng dirisa Leano la Go Nna Setšhaba se se Dirisang Haeterojene.

1.4. Go tlhabolotswe dilo dingwe di le mmalwa mo intasetering ya motlakase mo Aforika Borwa fa e sa le IRP 2019 e phasaladiwa mme tsa konokono mo dilong tseno ke tse di akaretsang:

1.4.1. Go tlhomiwa ga Khomišine ya Tlelaemete ya Boporesidente (Presidential Climate Commission [PCC]) e leng setheo sa bana-le-seabe ba ba farologaneng e e tlhomilweng ke Poresidente wa Repaboliki ya Aforika Borwa go ntsha dikgakololo ka ga tsela ya go tsibogela phetogo ya tlelaemete le ka ditsela tse di farologaneng tsa go anamisa motlakase ka

tsela e e fokotsang mathata a phetogo ya tlelaemete gore re nne le khabone e e kwa tlase mo setšhabeng.

Nngwe ya ditiro tsa yone, e ne e le Thulaganyo ya Tlamelo ka Motlakase o o Sa Fetlhiweng ka Ditukisi. Mo godimo ga moo, Komiti ya Ditona Tse di Farologaneng (the Inter-Ministerial Committee [IMC]) tsa Go Fetogela Kwa Maatleng a a Phepa a Motlakase di tlamile Leano la Dipeeletsomadi Tsa Go Fetogela Kwa Maatleng a a Phepa a Motlakase (Just Energy Transition Investment Plan [JET IP]) le go tsenya Leano leo tirisong morago ga moo ka 2023-2027 le le tla supang bontsi jwa ditlhoko tse di leng teng le dipeeletsomadi tse di tlhokegang gore go fitlhelwe maikemisetso a go fokotsa khabone tumalanong le Boikemisetso jwa Bosetšhaba jwa Aforika Borwa jwa Go Thusa (South Africa's Nationally Determined Contribution [NDC]).

1.4.2. Leano la Go Tsaya Kgato ka Eneji le le diretswng go fokotsa dikgaogo tsa motlakase le go tlamela ka motlakase o o sa tlhaeleng jaaka Poresidente a ile a dira kitsiso ka gone ka Phukwi, 2022. Leano le le dirilweng ka fa tlase ga bookamedi jwa Komiti ya Bosetšhaba ya Mathata a Eneji (National Energy Crisis Committee [NECOM]) le na le dikgato tsa botlhokwa di le tlhano tse di akaretsang; go tokafatsa madirelo a a leng teng a a fetlhang maatla a motlakase, go kgontsha le go akofisa go tsaya karolo ga ditlamo tsa poraefete mo tirong ya go fetlha motlakase, go akofisa tiro ya theko ya motlakase o moša go tswa mo madirelong a a sa direng ditukisi, a a dirisang gase le bobolokelo jwa beteri, go tlhama dikgwebo le go dira gore malapa a nne kle diphanele kwa godimo ga borulelo tsa motlakase o o dirisang mogote wa letsatsi, le go tlisa phetogo e e seng kana ka sepe mo setheong sa tsa motlakase gore se kgone go tlamela ka motlakase o o sa tlhaeleng o o nnang lobaka lo lo leele.

1.4.3. Boikaelelo jwa go tloswa ga dipatlafalo tsa dilaesense gore badirisi ba kgone go tsenela kgwebo ya go fetlha motlakase (Dijenereitara-Potlana Tsa Poloko ya Motlakase) e ne e le go kgontsha le go ngoka bagwebi ba ba oketsegileng go rarabolola bothata jwa dikgaogo tsa motlakase.

Go tla go fitlha gompiano jaana, kgatoharabololo eno e feletse ka go kwadisiwa ga diporojeke tse go nang le kgonego ya gore di ka fetlha motlakase o o fetang wa 6 000 MW.

- 1.4.4. Kgatoharabololo e e tserweng ke Lefapha la Bosetšhaba la Tsa Matlotlo go rarabolola sekoloto sa Eskom se se paledisang ditiro tsa setlamo sa tlamelo ka motlakase go tswelala pele le go aga ditlamelwa tse di oketsegileng. Go berekana le sekoloto sa Eskom ka katlego go tla tsenya bagwebi ba ba tlhokegang thata mo tirong ya botlhokwa ya tsamaiso ya motlakase le ya go tlamela ka ditlamelwa, le tlhokomelo e e tshwanetseng ya madirelo a a fetlhang maatla a motlakase le didirisiwa tsa teng.
- 1.4.5. Theko ya mo e ka nnang 6 000 MW e e oketsegileng ya phetlho ya motlakase ka thekenoloji e e tlhagisang khabone e e kwa tlase ya Lenaneo la Theko ya Motlakase le le Okobatsang Go Tlhaga ga Dikotsi la Setlamo se se Ikemetseng ka Nosi sa Tlhagiso ya Motlakase (Risk Mitigation Independent Power Producer Procurement Programme [RMIPPPP]), Kgato ya bo 5 le 6 ya Go Iteka Lesego (Bid Windows 5 and 6) la Tlhagiso ya Motlakase o o sa Fetlhweng ka Ditukisi le Kgato 1 ya Go Iteka Lesego ya Bobolokelo jwa Beteri.
- 1.5. Mo godimo ga ditlhabololo tse di mo lenaaneng le le fa godimo, diphopholetso di le mmalwa di ne tsa fetoga fa e sa ka go phasaladiwa IRP 2019. Diphopholetso tsa konokono tse di fetogileng di akaretsa phopholetso ya selekanyo se motlakase o tla tlhokegang ka sone, ka fa bodirelo jo bo fetlhang maatla a motlakase jwa Eskom bo tlileng go dira ka gone, mmogo le ditshenyegelo tsa thekenoloji e ntšha. Diphetogo tseno di dirile gore go tlhokege go sekaseka le go tlhabolola IRP e e neng ya felela ka gore go kwale IRP 2023 eno.

okgwa wa Go Tlhabolola IRP

- 2.1. Thulaganyo ya Tlhabololo ya IRP e ne ya dirwa go dirisiwa sedirisiwa sa Plexos. Sedirisiwa seno se na le kgono ya go bontsha gore go tla tlhagisiwa selekanyo se se kana kang sa motlakase le gore o tla okediwa ka selekanyo se se kana kang. Mokgwa wa go bontsha gore go tla tlhagisiwa selekanyo se se kana kang sa motlakase o kgona go bontsha gore jenereitara nngwe le nngwe e tla tlhagisa motlakase o mo kana kang kgotsa mokgwa ono e ka nna wa diphopholetso tsa dipalo tsa gore go tla tlhagisiwa selekanyo se se kana kang sa motlakase. Diphopholetso tsa selekanyo seo di akaretsa polelelopele ya selekanyo se motlakase o tlileng go tlhokega ka sone, dilekanyo tse motlakase o tlileng go tlhagisiwa ka sone ke metswedi e e fetlhang motlakase o o sa fetlhiweng ka ditukisi jaaka ka phefo le ka mogote wa letsatsi.
- 2.2. Mokgwa wa go okediwa ga selekanyo sa tlhagiso ya motlakase o akaretsa melawana ya ditshenyegelo tse di kwa tlase e e tla tlhagisang ditlhwatlhwa tse di botoka go gaisa tsotlhe. Seno se boloka tekatekano fa gare ga tlamelo ka motlakase le selekanyo se o tlhokwang ka sone go simolola ka lobaka lo lo mo magareng go fitlha ka lobaka lo lo leele ka go akanyetsa ditshenyegelo le selekanyo se motlakase o tlhagisiwang ka sone le go rulaganyetsa go nna le dipalo tse di nepagetseng tsa selekanyo se o tlhagisiwang ka sone. Boikaelelo ke go fokotsa ditshenyegelo tsotlhe tsa motlakase le go dira tshwetso ya gore gongwe go dirisiwa didirisiwa tse di leng teng tsa go fitlha maatla a motlakase kgotsa go tlhomiwe tse dintšha. Tshwetso eno ya go tlhoma tse dintšha e tla ikaega ka didirisiwa tse di sa tureng mme e le tse di kgonang go fitlhelela dipatlafalo tsa sefetlha motlakase, le go tlamela ka tlhalelo ya selekanyo se se tlhokegang sa motlakase. Ditshwetso tseno di ikaegile ka mathata a a jaaka go dira sentle ga madirelo, gore a ama tikologo jang, gore a dirisa metsi a ma kana kang, jj.

- 2.3. Tlhabololo eno e akanyeditse dinako tse pedi tsa mo isagweng tse dilo dingwe di tla dirwang go fitlha ka tsone, nako ya ntlha ke ya lobaka lwa go fitlha ka 2030, lwa go tlhoma mogopolo mo go rarabololeng mathata a go fetlha selekanyo se se batlegang sa motlakase le gore sefetlha-motlakase se batla eng gore go tlamelwe ka motlakase o o ntseng o tlhabela.
- 2.4. Nako ya bobedi e dilo dingwe di tla dirwang go fitlha ka yone e akaretsa lobaka lwa go simolola ka 2031 go fitlha ka 2050 mme yone e tlhoma mogopolo thata mo ditseleng tsa lobaka lo lo leele tsa go anamisa motlakase tsa naga ya rona go kaela dikgato tsa pholisi tsa lobaka lo lo leele.
- 2.5. Malebana le Nako ya Ntlha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone, go ne ga tlhamiwa maemo a matlhano a bo a sekasekiwa go ya ka diporojeke tse di neng di setse di siametse tiro. Maemo a a neng a akanyediwa a ne a le ka mokgwa o o latelang, jwa ntlha ke Lenaneo la Theko ya Motlakase le le Okobatsang Go Tlhaga ga Dikotsi la Setlamo se se Ikemetseng ka Nosi sa Tlhagiso ya Motlakase (Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP) REIPPPP 5 le diporojeke tsa kgwebo tse di santseng di tlhamiwa. Ya bobedi, madirelo otlhe a diporojeke a a nang le letlha la tiro la kgwebo (commercial operation date [COD]) le lefelo le le kailweng la kgwebo. Ya boraro, madirelo otlhe a porojeke go akaretsa le a a sa kgoneng go tshola selekanyo sa motlakase mo mafaratlhatlheng a tlamelo ya motlakase, COD le lefelo le le kailweng.
- 2.6. Mo godimo ga moo, maemo a mabedi, jo bongwe ke jo go umakiwang boemo bongwe jo go tsewang malebela mo go jone le lenaneo la ga jaanong ka gase, mme jo bongwe ke jwa go tokafala ga tiro ya bodirelo jo bo fetlhang maatla a motlakase go ya ka leano la go tsosolosa tiro ya go fetlha motlakase le le tlhabolotsweng.
- 2.7. Dipatlisiso ka Dinako Tse Dilo Dingwe di tla Dirwang go Fitlha ka Tsone di ne di akaretsa:
- Tshekatsheko ya tlamelo ka motlakase le selekanyo se o tlhokegang ka sone mo lobakeng lwa go fitlha ka 2030 ka go akanyetsa ditiragalo tsa bosheng mo ESI.

- Go balelelwa ga selekanyo se motlakase o tthagisiwang ka sone le tlhalelo ya one.
- Madirelo a a santseng a tlaolwa le go newa maemo a tiro, a a santseng a akanyediwa ka mokgwa wa kgato ya go iteka lesego (bid window) e e eteletsweng pele ke puso le ke setheo sa poraefete.
- Tshekatsheko ya gore madirelo a a tshitshintsweng a rarabolola tlhalelo ya motlakase go ya bokgakaleng jo bo kana kang.
- Go thaola dikotsi tse di ka amang fela thata tsamaiso ya motlakase ka tsela e e sa siamang.
- Go tshitshingwa ga dikgatotharabololo tse di tlhokegang go tokafatsa boemo jwa go se tlhale ga motlakase mo tsamaisong ya naga ya rona ya tlanelo ka motlakase.

2.8. Malebana le Nako ya Bobedi e Dilo Dingwe di tla Dirwang go Fitlha ka Yone, go ne ga akanyediwa mekwa e merataro ya go anamisa motlakase, go akanyediwa tlhokego ya gore go se nne le tlhalelo ya motlakase le go fokotsa go ntshiwa ga digase tsa GHG mo moweng tumalanong le maikemisetso a Aforika Borwa. Boikaelelo jwa ditsela tsa go anamisa maatla a motlakase ke go nna le ditshwetso tsa pholisi tse di leng ka ga maatla a motlakase a a sireletsegileng le a a sa tlhaleleng mo Aforika Borwa mo lobakeng lwa morago ga 2030. Mokgwa o o umakilweng wa go anamisa motlakase ke o go tsewang malebela mo go one ka go o bapisa le mekgwa e mengwe ya go anamisa motlakase mme e ne e le o o sa tureng mo go yone yotlhe, o o akanyeditseng go fokotsa digase tse di ntshediwang mo moweng.

2.9. Dipatlisiso ka Dinako Tse Dilo Dingwe di tla Dirwang go Fitlha ka Tsone di ne di akaretsa:

- Go umakiwa ga dikgwetlho tse di leng teng le tse go lebeletsweng gore di nne teng tsa ESI tse di tla felelang ka tlhalelo ya motlakase.
- Go sekaseka ditsela di le mmalwa tsa konokono tsa go anamisa motlakase wa lobaka lo lo mo magareng go fitlha ka lo lo telele ka boikaelelo jwa go tlhomamisa gore e nna o o lekaneng, o o sa kgaogeng.k

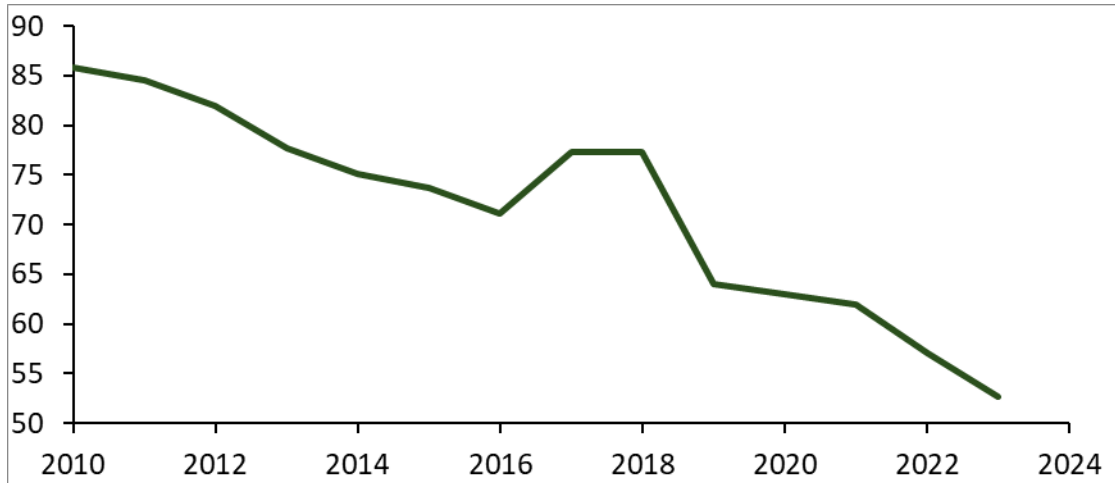
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intlha Tse di Akanyeditsweng tsa Tshekatsheko ya IRP

3.1 Tiro ya Bodirelo jo bo Fetlhang Maatla a Motlakase Jwa Eskom

Mo teng ga 2019 IRP, go ne ga fopholediwa gore selekanyo se se leng teng sa eneji (energy availability factor [EAF]) mo bodirelong jwa Eskom e ne e le sa palogare ya 75% mme EAF ya mmatota ka nako eo yone e ne e le ya palogare ya diperesente di le 70. Tiro ya 2023 ya ngwaga wa ditšhelete e wetse kwa tlase go diperesente di le 54.72, seno ke selekanyo sa ka fa bodirelo jo bo fetlhang motlakase bo dirileng ka gone se se neng sa fopholediwa mo tshekatshekong eno se tota se neng se sa lekane le phopholetso e e neng e dirilwe. Malebana le seno, pilara ya ntlha ya Leano la Go Tsaya Kgato ka Eneji le eteleditswe kwa pele go tokafadiwa ga tsela e bodfirelo jo bo fetlhang motlakase bo dirang ka yone mme e begile gore dilo di tokafetse go sekae. Ka fa tlase ga pilara eno, tshekatsheko ya setegeniki e e dirwang ke setlamo se se ikemetseng ka nosi ya diteišene tsa maatla a motlakase e tswelletse pele go batlana le dikgwetlho le go tlalema ka ditshitshinyo tsa gore go tsewe dikgato dife. E re ka madirelo a Eskom e santse e le one a mantsi mo nageng yotlhe go fetlha mo e ka nnang 80% ya motlakase, kwetlotlase ya EAF jaaka e bontshiwa go Setshwantsho1 go e tswelela pele go baka matshosetsi a tlhalelo e e masisi ya motlakase.

Seno se feletse ka dikgaogo tse dintsi thata tsa motlakase lobaka lo lo leele le go tsenya kgatelopele ya ikonomi mo kotsing.



Setshwantsho1: Boemo ja mmtota jwa EAF go simolola ka 2010

3.2 Leano la go Tswala Madirelo A Eskom a go Fetlha Motlakase

Fa e sa le 2019 IRP e phasaladiwa, go tswalwa ga Eskom go ntse go sekasekwa le go tlabololwa jaaka Leano la 2035 la Eskom. Seno se ne sa felela ka kgopolo ya go tswalwa ga diteišene di la mmalwa tsa maatla a motlakase, tse di tshwaetsweng go tswalwa ka 2030, tse di dirisitsweng lobaka lo lo fetang lo lo neng lo lebeletswe. Tshekatsheko eno e thusitse go fokotsa tlhalelo ya maatla a motlakase go tla go fitlha jaanong jaana, le fa seno se sa lekana.

Ka sekai, leano leno le dirile gore seteišene sa motlakase sa Tutuka se tswalwe pele ga nako, pele se fetsa dingwaga tsa sone tse 50. Seno se ne se tla bo se raya go tswalwa ga diyuniti tsotlhe tse thataro tsa Tutuka mo bokhutlong jwa 2030, dingwaga di le 10 pele ga diyuniti tseno di felelwa ke lobaka lwa tiro ya tsone mme seno se tla baka tlhalelo ya 3 500 MW e e fetlhwang ke seteišene seno gone jaanong.

3.3 Dikgwetlho tsa Kago-Sesha Tsa Eskom

Tiro ya kgwebo ya Lenaneo le Lesha la Kago la Eskom e ne ya simolola ka Medupi 6 ka Phatwe 2015. Fa e sa le ka nako eo, diyuniti tse dingwe di ne tsa dirwa gore di tsamaisane le mafaratlhatlha a tlamelo ya motlakase mme lefa go ntse jalo, diyuniti tseno ga di dire ka selekanyo se se neng se lebeletswe ka ntlha ya mabaka a a farologaneng, go akaretsa le tsela e di tshamilweng ka yone le diphoso dingwe mo go tshamiweng ga tsone. Ka tsela e e tshwanang, go na le dikgwetlho dingwe kwa Seteišeneng sa Motlakase sa Kusile tse di kgoreletsang go ntshiwa ga maatla a motlakase go tswa mo diyuniting tse di

tsentsweng tirisong. Tiro ya go baakanya diphoso tse dikgolo tsa madirelo a a fetlhang maatla a motlakase e santse e tswelletse, mme go ya ka fa di neng di dira ka gone mo ngwageng o o fetileng, go bonala dilo di tokakala.

Diyuniti 5 le 6 tsa Kusile di santse di tlhoka go tsenngwa tirisong ka diponelopele tsa bošeng jaana tse di supahng gore di tla wediwa ka Moranang 2024 le ka Tlhakole 2025.

3.4 Leano la Go Dira Nako e Telele ga Koeberg

IRP 2019 e ne ya lemoga botlhokwa jwa go dira gore maatla a nyutlelia a nne a ntse a le teng mo teng ga motswako wa maatla a motlakase mo Aforika Borwa le go tsaya tsia seabe sa Seteišene sa Maatla a Nyutlelia sa Koeberg mo (Koeberg Nuclear Power Station [KNPS]) mo kgannyeng eno. E re ka laesense ya setsha seno e tloga e felelwa ke nako ka 2024, IRP 2019 e ne ya tshegetsa maitoko a a dirwang ke Eskom a go bona laesense ya go dira nako e telele (long-term operation [LTO]) dingwaga tse dingwe gape di le 20. Morago ga go phasaladiwa ga IRP 2019, Eskom e ne ya romela kgetsi ka tsa tshireletsego ka 2022, morago ga go sekasekwa ga yone ke Setheo sa Boditšhabatšhaba sa Eneji ya Diatomo. Setheo sa Balaodi ba Bosetšhaba ba Nyutlelia (National Nuclear Regulator [NNR]) se tshwaragane le go sekaseka kgetsi eno ka tsa tshireletsego go tshegetsa tshwetso e e dirilweng ka 2019 ya pholisi ya go atolosa lobaka lwa tiro ya bodirelo.

3.5 Go Ikobela Ditekanyetso-Potlana Tsa go Ntshetsa Digase mo Moweng

Melawana ya boleng jwa mowa ya Molao wa Botsamaisi jwa Bosetšhaba jwa Tikologo: Boleng jwa Mowa (Molao wa bo39 wa ka 2004) o laela gore madirelo a a fetlhang maatla a motlakase ka magala a e leng didirisiwa tsa Eskom, gareng ga tse dingwe, a tshwanetse go fitlhelela ditekanyetso-potlana tsa go ntshetsa digase mo moweng (minimum emission standard [MES]) mo nakong e e rileng, go seng jalo a tla bo a sa tsamaisane le melawana eno mme ga e kitla e dirisiwa semolao.

Fa a dirisiwa mme a sa fitlhelele ditekanyetso tseno, tshwetso eo e tla dira gore go nne le tatlhegelo ya selekanyo se motlakase o tlhokwang ka sone mo teng ga sefetlha-motlakase mo lobakeng lo lo khutshwane go fitlha mo lobakeng lo lo mo magareng o o ka nnang kana ka:

- 16 000 MW ka bonako le
- Go fitlhago 30 000 MW morago ga Mopitlwe 2025, fa dipusetso-morago tsa ga jaanong di felelwa ke nako.

Go tla tshwanelwa ke gore go nne le tekatekano fa gare ga eneji e e sa tlhaeleng, diphelelo tse di masisi mo botsogong tsa boleng jo bo kwa tlase jwa mowa le ditshenyegelo tsa ikonomi tse di amanang le go tswalwa ga madirelo ano a a fetlhang maatla a motlakase.

3.6 Nako le Go Simololwa ga Selekanyo se Sesha sa Motlakase

Go tla go fitlha gompiono le morago ga go phasaladiwa ga IRP 2019, go rekilwe selekanyo se se fetang 6 000 MW sa motlakase o mosha o o fetlhiwang ka mananeo a a farologaneng a theko. Diporojeke tse di simolotsweng di mo dikgatong tse di farologaneng tsa go tsenngwa tirisong mme go na le diporojeke dingwe tse di diegisitsweng kgotsa tse di sa kgoneng go fitlhelela ditekanyetso tsa semolao le tse di fitlhileng mo nakong ya go ntsha pego ka madi a tsone.

3.7 Go Tlhamiwa ga Mafaratlhatlha a Tlanelo ya Motlakase le Tsamaiso ya One

Go ya ka Leanotlhabololo la Tsamaiso ya Maatla a Motlakase la Eskom (Transmission Development Plan² [TDP]) la 2022–2032, dineteweke tsa tsamaiso ya maatla a motlakase kwa dikgaolong tsa Kapa Botlhaba, Bokone le Bophirima di na le mathata a a seng kana ka sepe a tsamaiso ya maatla a motlakase [5]. Leano leno le bontsha gore dipeeletsomadi tse di kileng tsa dirwa mo megaleng ya tsamaiso ya motlakase dingwaga di le robonngwe fa gare ga 2013 le 2022 di dirile fela megala ya bolelee jo bofetang 4 000 km mme go santse go tlhokega megala e mesha ya tsamaiso ya motlakase ya bolelee jo bo fetang 14 000 km ka 2032. Ka jalo, seno se raya gore naga ya rona e tlhoka dipeeletsomadi tsa ka bonako gore go nne le ditlamelwa tsa tsamaiso ya motlakase ka go tlhama megala e mesha le diteišene-potlana le go nonotsha diteišene-potlana tse di leng teng. Eskom e tsaya dikgato tsa go

²https://www.eskom.co.za/wp-content/uploads/2023/01/Transmission_Development_Plan_2023_E2_80_932032_Rev1.pdf

akofisa tiro ya diporojeke tsa diteransefoma gore mafaratlhatlha a tlamelo ya motlakase a nne le motlakase o o lekaneng.

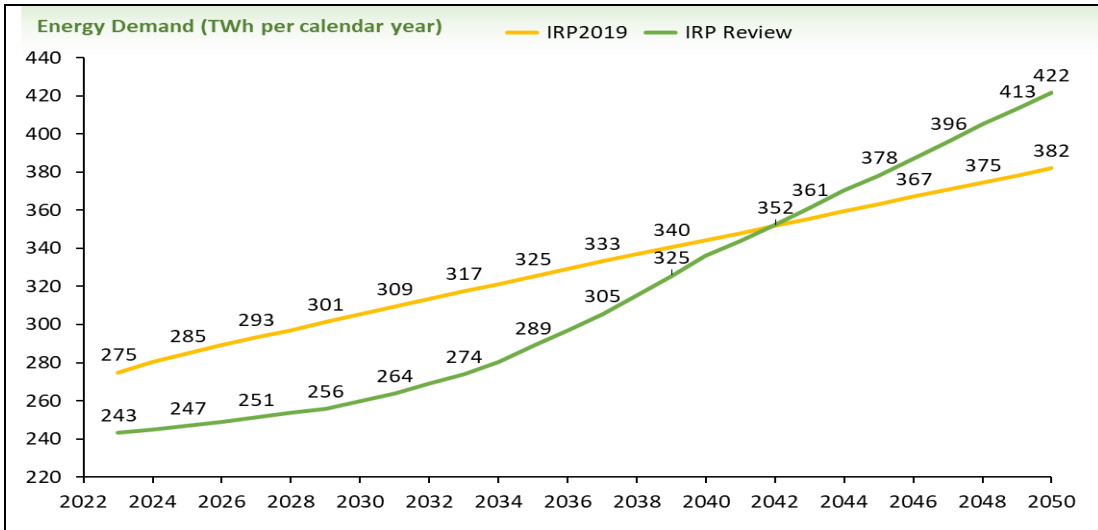
itshwaelo ka Diphopholetso Tsa Dilekanyo Tse di Dirilweng

Tshedimosetso e e nang le diphopholetso tse di neng di dirisiwa mo Tshekatshekong ya IRP e ne ya kokoannngwa go tswa go bana-le-seabe ba ba farologaneng le metswedi e e farologaneng e e jaaka, Kantoro ya IPP, Eskom, setheo sa poraefete, NECOM, EPRI 2021 le mo dipegong tsa 2023 tsa Lazard tsa Moranang.

4.1 Phopholetso ya Selekanyo se Motlakase o tla Tlhokegang ka Sone

Ponelopele ya tlhokego ya selekanyo sa motlakase e e tlhamilweng ke ERSG ya UCT e bontsha gore selekanyo se motlakase o tlhokegang ka sone ga jaanong jaana se kwa tlase ka 19% go feta ka fa go neng go fopholeditswe ka gone mo go IRP 2019 jaaka go bontshiwa mo Setshwantsho2. Phetogo eno ya selekanyo se o tlhokegang ka sone e bakilwe ke mabaka a la mmelwa a naga yarena le dinaga tse dingwe mo lefatsheng jaaka dikgaogo tsa motlakase, leroborobo la Covid-19 le ntwaga kwa Yuropa Botlhaba. Ponelopele ya IRP 2023 e fopholetsa gore maemo a boela meriting ka iketlo ka ntlha ya maemo a ga jaanong a ikonomi a lobaka lo lo khutshwane go ya go lobaka lo lo mo magareng. Go simolola mo bogareng jwa dingwaga tsa bo 2030, ponelopele e e dirilweng e amana le diphetogo tsa Lefapha la Bosetšhaba la Matlotlo tse di tla tlisang kgolo ya ikonomi

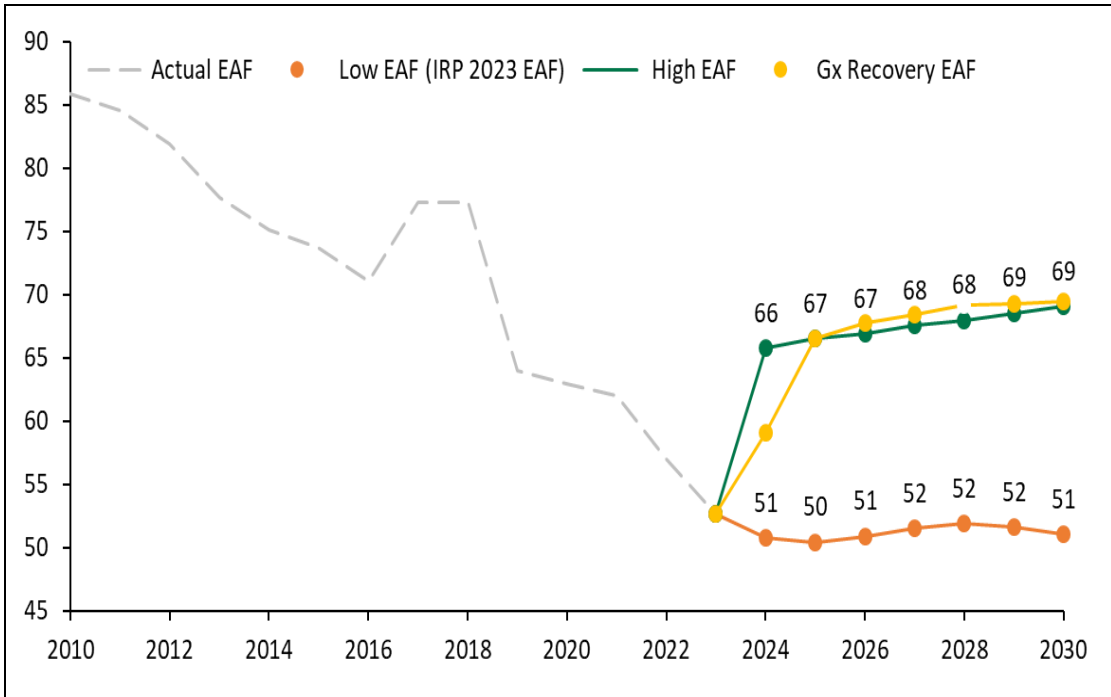
Selekanyo se motlakase o tlhokegang ka sone go tlhagisa haeterojene e e phepa ga se ise se akarediwe mo ponelapeleng ya selekanyo se motlakase o tla tlhokegang ka sone mo phopholetsong ya gore ditheo tse di tla tlhagisang leokwane leno di tla itirela maatla a motlakase a a sa fetlhiweng ka ditukiso le go dira a mangwe a a oketsegileng.



Setshwantsho2: Selekanyo se Motlakase o Tlhokegang ka Sone (TWh ngwaga le ngwaga)

4.2 Selekanyo se se Leng Teng sa Eneji mo Bodirelong jo bo Fetlhang Maatla a Motlakase jwa Eskom

Ditshwaelo tsa Eskom mo teng ga thulaganyo ya Tshekatsheko ya IRP ka ga go Fetlha Motlakase di ne di akaretsa maemo a Selekanyo se se Leng Teng sa Eneji se se kwa godimo le se se kwa tlase. Ka Motsheganong 2023, boemo jo bo kwa godimo jwa EAF bo ne jwa sekasekwa mo Leanong la Go Tsosolosa Tiro ya Go Fetlha Motlakase, go akanngwa ka ditlamorago tsa teng, gareng ga tse dingwe, ka go phuthama ga sentsha mosi sa FGD kwa Seteišeneng sa Go Fetlha Maatla a Motlakase sa Kusile se se neng sa felela se na le diyuniti tse thataro tse di sa direng lobaka lo lo leele. Leano la Go Tsosolosa Tiro ya Go Fetlha Motlakase le tla simolola tsosoloso eno ka EAF e e kwa godimo ka 2025, jaaka go bontshiwa go Setshwantsho3. Maemo a EAF e e kwa tlase a tsewetsa pele kwelotlase ya gone jaanong ya EAF.



Setshwantsho3: Dintlha-Kakaretso tsa madirelo a a leng teng a diphopholetso tsa EAF (%)

4.3 Leano la go Tswala Madirelo la Eskom

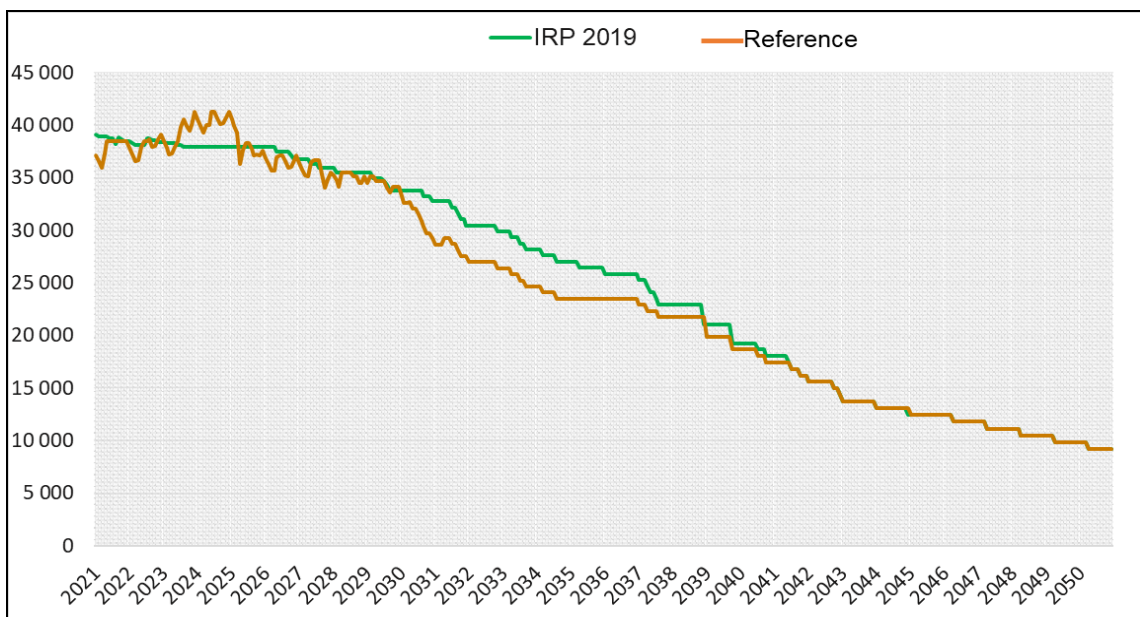
Malebana le lobaka lwa go dira ga diteišene tse di fetlhang maatla a motlakase ka magala, leano le le tihabolotsweng la 2023 la go tswala madirelo a Eskom le ne la lejwa e le tshwaelo e e neng ya dirwa mo thulaganyong ya tshekatsheko mme le lejwa e le Le go ka Tsewang Malebela mo go Lone jaaka go tshwantshitswe go Lenaanethalo 1. Matlha a a bontshiwang mo leanong la go e tswala a theilwe go lobaka lwa dingwaga di le 50 tsa go dira ga bodirelo jo bo fetlhang maatla a motlakase mme diteišene dingwe tsone di tswalwa pele ga di fetsa lobaka lwa dingwaga tsa tiro ya tsone.

Lenaanethalo 1: Leano la Eskom la go tswala seteišene se se fetlhang motlakase ka magala

	Arnot	Camden	Duvha	Grootvlei	Hendrina	Kendal	Komati	Kriel	Kusile	Lethabo	Majuba	Matimba	Matla	Medupi	Tutuka
U1	31-Mar-27	30-Aug-24	17-Aug-31	16-Aug-26	01-Apr-18	30-Sep-39	01-Apr-18	05-May-26	29-Aug-68	21-Dec-36	31-Mar-46	03-Dec-38	22-Aug-30	31-Jul-71	15-Mar-30
U2	31-Aug-26	30-Apr-25	30-Sep-31	21-Mar-26	10-Feb-25	19-Jun-41	01-Sep-18	13-May-27	30-Oct-70	10-Jul-37	31-Mar-47	03-Dec-38	29-Jun-31	30-May-69	10-Jan-30
U3	31-Jul-26	30-Nov-24	01-Dec-17	04-Sep-27	01-Jun-17	15-Dec-42	01-Sep-18	27-Jan-28	30-Aug-71	26-Mar-37	31-Mar-48	28-Sep-39	11-Dec-31	30-Oct-68	28-Jul-30
U4	31-Mar-27	31-Jan-23	30-Jun-33	01-Apr-18	31-Mar-25	30-Nov-42	01-Jun-20	21-Aug-29	30-Jun-72	02-Dec-38	31-Mar-49	29-Sep-40	15-Oct-32	30-Nov-67	22-Apr-30
U5	24-Nov-29	30-Nov-25	30-Mar-33	01-Apr-18	31-Dec-25	23-Dec-43	01-Jun-19	12-Mar-29	31-Dec-72	30-Jun-40	31-Mar-50	30-Sep-41	23-Aug-33	30-Apr-67	25-Sep-30
U6	31-Mar-29	31-Jul-23	21-Feb-34	01-Apr-18	13-Sep-25	09-Dec-44	01-Apr-18	16-Nov-30	30-Jun-73	27-Dec-41	31-Mar-51	30-Sep-42	20-Jul-34	31-Aug-65	05-Jun-30
U7		31-Jan-24			19-Mar-24		01-Sep-19								
U8		31-Jul-25			01-Jun-19		01-Apr-18								
U9					01-Oct-19		31-Oct-22								
U10					21-Mar-23										

Ditshekatsheko tsa maano a go se tswala a a dirisitsewng mo IRP 2019 mme tshekatsheko eno e bontshiwa mo Setshwantsho 4, mme e senola dilo tse di latelang:

- Diyuniti tse di dirang lobaka lo lo fetang matl;ha a di tshwanetseng go tswalwa ka one a a tlhalosiwang go IRP 2019, di bontsha go nna le selekanyo se se lekaneng sa motlakase mo dingwageng tsa ntlha tsa go dira ga tsone,
- Go tswalkwa ga seteišene sa maatla a motlakase ka 2030 go supa go lathegelwa ke go fetlwa ga maatla a motlakase a bokana ka 3 500 MW.



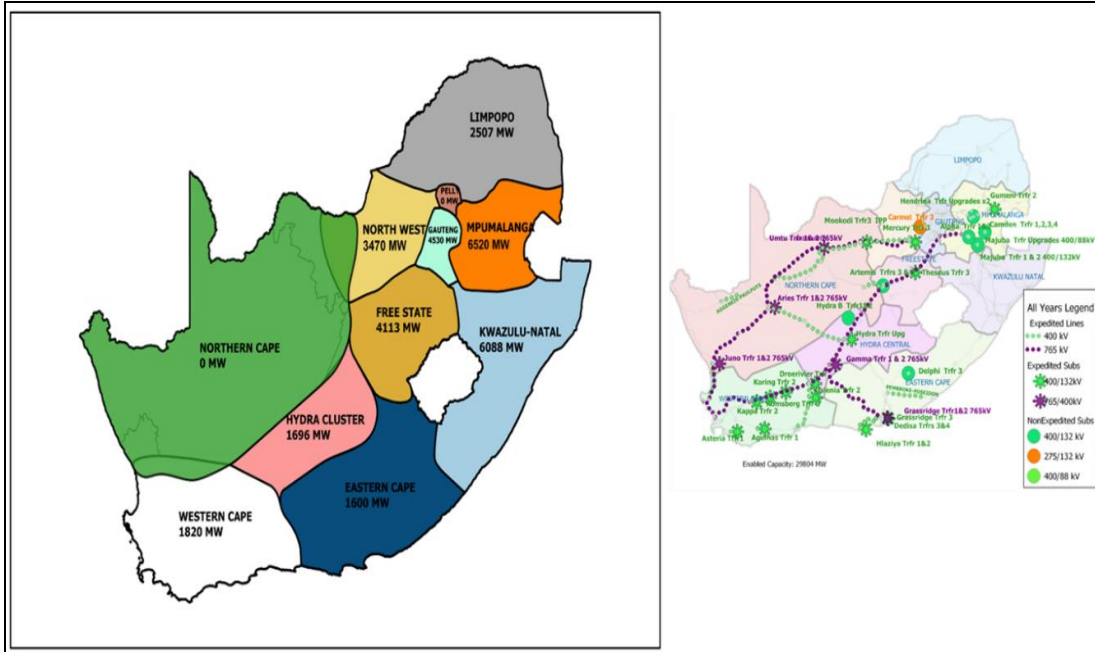
Setshwantsho 4: Dintlha-kakaretso tsa ditlamorago tsa go tswalwa ga madirelo a a leng teng a a fetlhang motlakase ka magala

4.4 Tsamaiso e e Leng Teng ya Motlakase

Tshekatsheko ya Kgokagano ya Sefetlha Motlakase (Generation Capacity Connection Assessment [GCCA]) 20243 [6] e bontsha gore go na le kgonego ya go fetlha motlakase mo mafaratlhatlheng a tsamaiso ya motlakase go dira gore go gokaganngwe diporojeke tsa go fetlha motlakase mo porofenseng nngwe le nngwe jaaka go tshwantshitswe mo Setshwantsho5. GCCA e akanyetsa diporojeke tsotlhe tse di santseng di dirwa go akaretsa le diporojeke tse di konetsweng go fitlha ka Kgaoto ya bo 6 ya Go Iteka Lesego

³<https://www.eskom.co.za/wp-content/uploads/2022/04/Generation-Connection-Capacity-Assessment-GCCA-2024-rev15-Final.pdf>

(Bid Window 6) mme di santse di bopiwa kgotsa di setse di fithile mo nakong ya go ntsha pego ka madi a tsone. Gape Eskom e tlamile Leanotlhabololo la Tsamaiso ya Maatla a Motlakase (Transmission Development Plan [TDP]) 2023 – 2032 le le bontshang go atolosa le go nonotsha mafaratlhatlha a Tsamaiso ya Maatla a Motlakase fa nako e ntse e tsamaya.

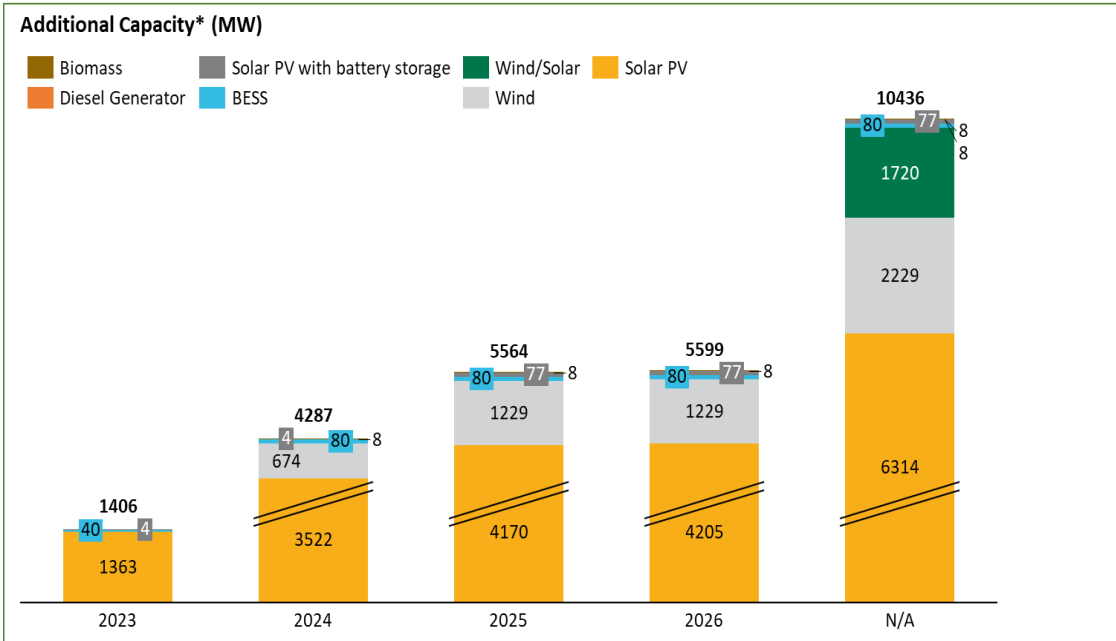


Setshwantsho5: Kgono ya mafaratlhatlha a tlamelo ya motlakase ya go tlamela ka one fa o tlhokwa go ya ka GCCA 2024

GCCA le TDP di a dirisiwa mo tshekatshekgong eno go batlana le selekanyo se sengwe sa motlakase o o fetlhiwang o o ka golaganngwang le mafaratlhatlha a tlamelo ya motlakase ka nako ya patlisiso. Leba Mametlelelo B ya go tlotlhomisa selekanyo se se oketsegileng mo teng ga mafaratlhatlha a tlamelo ya motlakase.

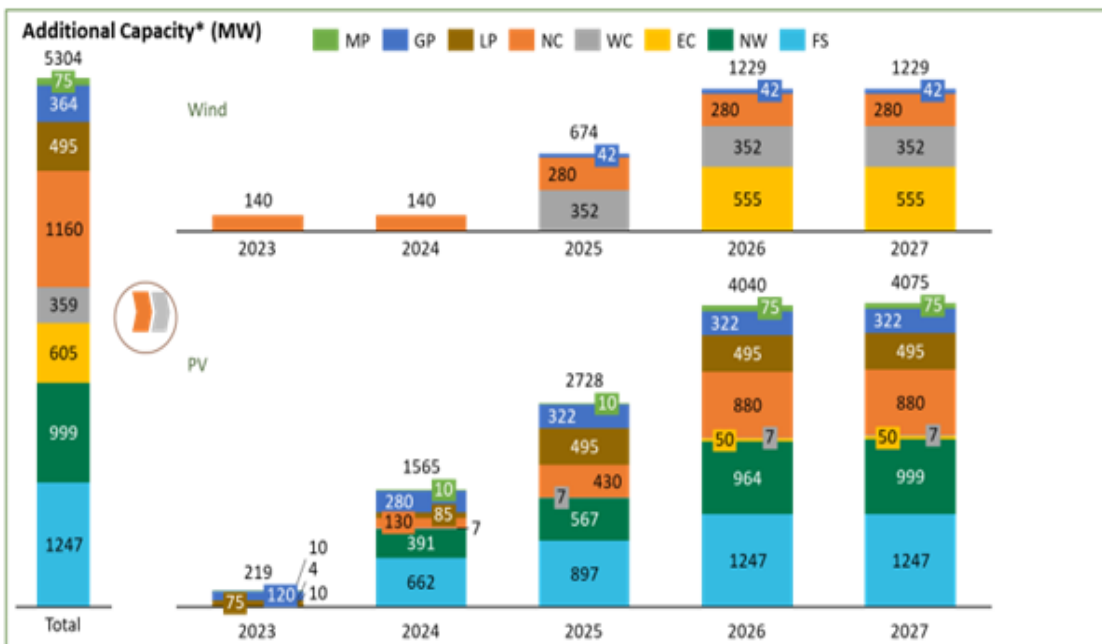
4.5 Madirelo a go Fetlha Maatla a Motlakase ga Setheo sa Poraefete

Tshedimosetso ka diporojeke tsa go feltha motlakase ga bagwebi e bontsha lenaane la diporojeke tsa selekanyo sa motlakase o o fetlhiwang o o kana ka 10 400 MW ka 2030 jaaka go bontshiwa go Setshwantsho6.



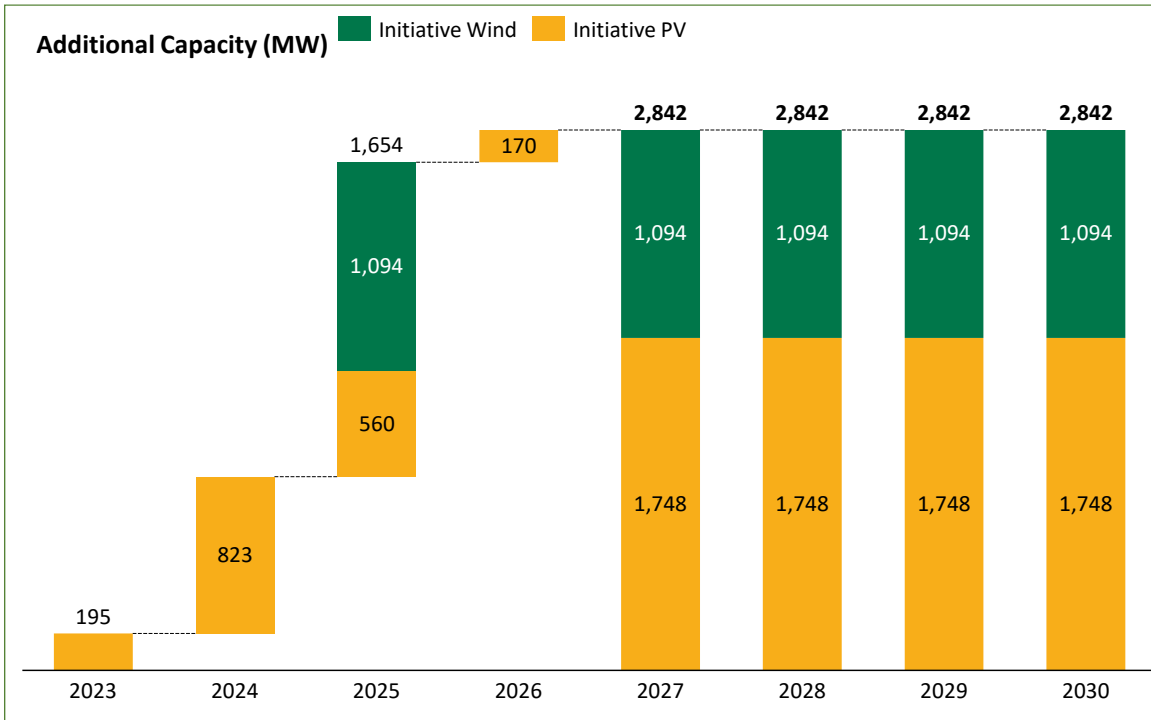
Setshwantsho6: Madirelo otlhe a kgwebo a theilwe mo thekenolojeng le mo COD

Kgwebo ya Setshwantsho6 fa godimo ga e akaretsa madirelo a a senang lefelo le le umakilweng le letlha la go tsamaisa kgwebo (commercial operation date [COD]) ka gonne go na le kgonego e e seng kalo ya gore di ka fetogta. Setshwantsho 7 fa tlase e bontsha boemo jo go nang le kgonego ya gore diporojeke tse go nang le kgonego ya gore di nne le dikotsi dingwe di se ka tsa akarediwa mo diphophletsong.



Setshwantsho 7: Madirelo a Kgwebo a a nang le mafelo le COD

Setshwantsho 8 e bontsha diporojeke tse di tswelletseng pele le tse di fitlhileng mo nakong ya go ntsha pego ka madi a tsone.



Setshwantsho 8: Madirelo a kgwebo a a ka tswang a santse a dirwa kgotsa a a fitlhileng mo nakong ya go ntsha pego ka madi a one.

**itshekatsheko tsa Nako ya Ntlha e Dilo Dingwe di tla
Dirwang go Fitlha ka Yone (Lobaka lwa 2023 go fitlha ka
2030)**

Go rulaganngwa ga Nako ya Ntlha e Dilo Dingwe di tla Dirwang Go Fitlha ka Yone go ne ga lekeletsa maemo a le mane a a theilweng go EAF e e kwa tlase le boemo jo bongwe jo bo theilweng go EAF e e kwa godimo (Leano la Tsosoloso ya Go Fetlha Maatla a Motlakase le le bontshiwang go Setshwantsho³), go tlhotlhomisa gore motlakase o tla abiwa ka selekanyo se se kana kang le gore o tla tlhokwa ka selekanyo se se kana kang. Boikaelelo jwa maemo a matlhano e ne e le go sekaseka ditlamorago tsa ditsela tsa go oketsa maatla a motlakase tse di santseng di tlhamiwa ke puso le ke setheo sa poraefete go tokafatsa gore maatla a motlakase a se ka a tlhabela.

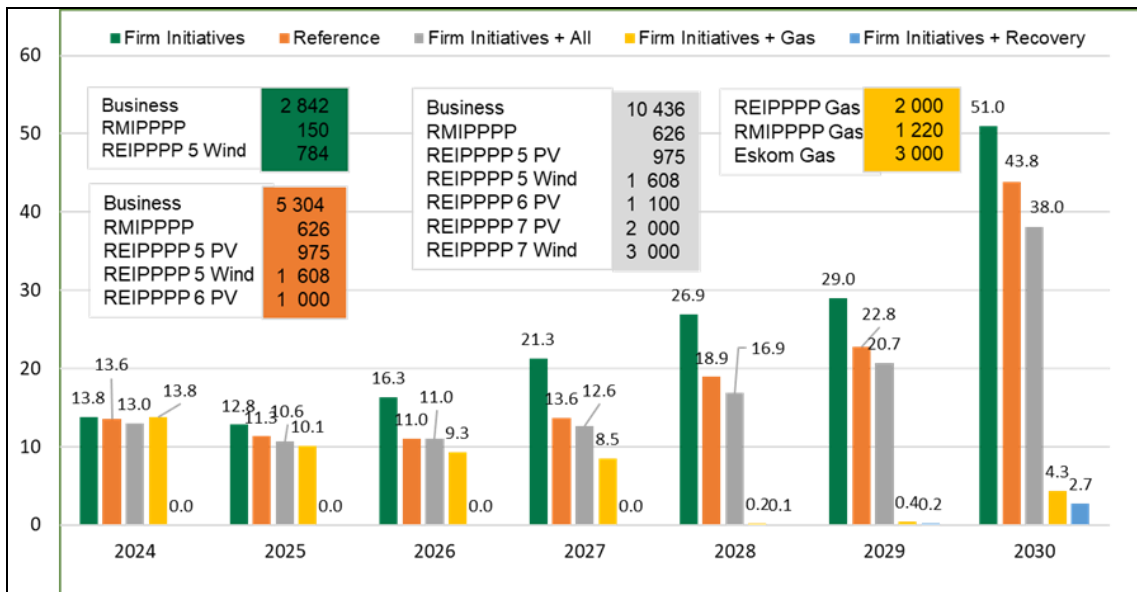
Fa go ne go tlhamiwa maemo ano, diporojeke tse di neng di tlile go dirwa di ne tsa umakiwa mme tsa bewa ka maemo a go siamela ga tsone go dirwa. Maemo a matlhano a a tlhamilweng a tlhalosiwa ka botlalo go Setshwantsho 9 fa tlase fano.

	EAF	Initiatives 2030 (MW)	New Gas (MW)	Comments
1 Firm Initiatives	49% – 51%	Business 2 842 RMIPPPP 150 REIPPPP 5 Wind 784	0	<ul style="list-style-type: none"> Priority Projects as ranked by business and have grid capacity reserved as at June 2023 Government projects in the RMIPPPP + REIPPPP programme under construction
2 Reference	49% – 51%	Business 5 304 RMIPPPP 626 REIPPPP 5 PV 975 REIPPPP 5 Wind 1 608 REIPPPP 6 PV 1 140 BESS BW 1-3 + Eskom 2 080	0	<ul style="list-style-type: none"> Business initiatives with COD and location Government projects in the pipeline
3 Firm Initiatives & All Initiatives	49% – 51%	Business 10 436 RMIPPPP 626 REIPPPP 5 PV 975 REIPPPP 5 Wind 1 608 REIPPPP 6 PV 1 140 REIPPPP 7 PV 2 000 REIPPPP 7 Wind 3 000	0	<ul style="list-style-type: none"> All initiatives including those with no grid capacity reservation, COD and/or location Includes REIPPPP 7 due for RFP
4 Firm Initiatives & Gas	49% – 51%	Same as 'Constrained New Build Development' Case	6 220	<ul style="list-style-type: none"> Gas includes DMRE Gas, Eskom Richards Bay Gas and RMIPPPP dispatchable Gas
5 Firm Initiatives & Recovery	66% - 69%	Same as 'Constrained New Build Development' Case	0	<ul style="list-style-type: none"> Eskom's EAF improvement as per its Generation Recovery plan

Setshwantsho 9: Nako ya Ntsha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone – Maemo ago dirilweng patlisiso ka one a lobaka lwa go fitlha ka 2030

5.1 Dipholo tsa Dipatlisiso ka Nako ya Ntsha e Dilo Dingwe Tse di tla Dirwang go Fitlha ka Yone

Dipholo tsa go lekana le maemo ano a Nako ya Ntsha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone go rarabolola mathata a tlhalelo ya motlakase (Tlhalelo ya selekanyo se se tlhokegang sa motlakase) di sobokangwa go Setshwantsho 10 fa tlase fa no le go thalosiwa fa tlase.



- **MADIRELO A SETLAMO (BOEMO JWA NTLHA)**

Boemo jono bo akanyetsa madirelo a dikgwebo tse di ka tsayang karolo mo tirong ya go fetlha motlakase tse di santseng di rulaganngwa ke puso le ke setheo sa poraefete mmogo le madirelo a a eteletsweng pele ke setheo sa poraefete.

Dipholo tsa boemo jono di bontsha selekanyo se se kwa godimo thata sa tlhalelo ya motlakase o o tlhokwang mo go rayang gore tsamaiso ya maatla a motlakase e a imelwa mo nakong yotlhe ya go dirwa ga patlisiso eno. Tlhalelo ya Selekanyo se se Tlhokegang sa Motlakase e ka nna ya ya godimo go feta 50 000 MWh ka 2030 jaaka go bontshiwa go Setshwantsho 10 ga godimo, go lekana le maatla a motlakase a a tlhagisiwang ka ngwaga a menagane sebedi a seteišene sa maatla a motlakase sa 3 700 MW se se tsholang selekanyo se motlakase o tlhokwang ka sone. Mo godimo ga moo, tiriso ya diteišene tsa maatla a motlakase tse di dirang fela ka nako ya fa o tlhokwa ka bontsi mo boemong jono e kwa godimo thata go fitlha go selekanyo sa 80% jaaka go bontshiwa go Mametlelelo B.

- **GO TSAYA MALEBELA (BOEMO JWA BOBEDI)**

Boemo jono bo akanyetsa madirelo a a ka tsayang karolo mo tirong ya go fetlha motlakase mo Boemong Jwa Ntlha go akaretsa le madirelo a a neilweng lethla la go dira tiro le lefelo la bodirelo le theko ya dithoto mo boemong jwa puso, e leng ditiro tse di dirwang ke DMRE e e eteletsweng pele ke Kantororo ya IPP.

Dipholo tsa boemo jono di supa gore tlhalelo ya selekanyo se se tlhokegang sa motlakase e tswelala pele e le kwa godimo mo boemong jono mme boemo bo tokafala go le gonnye fela ka ntlha ya madirelo a a di tsayang karolo mo tirong ya go fetlha motlakase o montsinyana. Dipholo tsa boemo jono gape bo supile gore tiriso ya diteišene tsa maatla a motlakase tse di dirang fela ka nako ya fa o tlhokwa ka bontsi e kwa godimo thata go fitlha go selekanyo sa 80%.

- **MADIRELO A SETLAMO LE MADIRELO OTLHE (BOEMO JWA BORARO)**

Boemo jono bo amana le madirelo otlhe a a tsayang karolo mo tirong ya go fetlha motlakase mmogo le madirelo a a amanang le ditheko tsa dithoto mo boemong jwa puso go fitlha go Kgato 7 ya Go Iteka Lesego (Bid Window 7) e e dirwang ke DMRE e eteletswe pele ke Kantoro ya IPP.

Ka fa tlase ga boemo jono, dipholo di supa go tokafala ga dilo go ya pele mo kgannyeng ya tshaelo ya selekanyo se se tlhokegang sa motlakase, seno se bonwa go simolola kwa ngwageng wa 2028 fa se bapisiwa le boemo jwa bobedi. Lefa go ntse jalo, selekanyo sa tshaelo ya selekanyo se se tlhokegang sa motlakase se tswela pele se le kwa godimo mme tiriso ya ditešene tsa maatla a motlakase tse di dirang fela ka nako ya fa o tlhokwa ka bontsi le yone e tswela pele e le kwa godimo thata.

- INITIATIVE LE GASE (BOEMO JWA BONE)

Boemo jono bo amana le madirelo a dikgwebo tse di tsayang karolo mo tirong ya go fetlha motlakase mo Boemong Jwa Ntlha mmogo le gase go fetlha motlakase ka yone ga Eskom le ga DMRE ka Kantoro ya IPP.

Dipholo di supa gore mo lobakeng lwa go fitlha go ngwaga wa 2027, tsamaiso ya maatla a motlakase e santse e imelwa jaaka fa madirelo a a tsayang karolo mo tirong ya go fetlha motlakase a sa lekana go fokotsa selekanyo sa tshaelo e motlakase o tlhokegang ka sone le go tlamela ka one le go tsosolosa tlamelo e e sa kgaogeng ya motlakase. Go simolola ka ngwaga wa 2027, madirelo a mangwe a a oketsegileng a a tsayang karolo mo tirong ya go fetlha motlakase a tla tlamela ka gase ka nako ya fa selekanyo se se tlhokegang sa motlakase se simolola go tshaela. Gantsi tiriso ya ditešene tsa maatla a motlakase tse di leng teng tse di dirang fela ka nako ya fa motlakase o tlhokwa ka bontsi e fokotse ga ka 30% e leng palo e e santseng e le kwa godimo thata.

- MADIRELO A SETLAMO LE TSOSOLOSO (BOEMO JWA BOTLHANO)

Boemo jono bo amana le matsholo a dikgwebo tse di tsayang karolo mo tirong ya go fetlha motlakase mo Boemong Jwa Ntlha go akaretsa le tsosoloso ya EAF (EAF e e kwa godimo).

Dipholo tsa boemo jono di bontsha gore motlakase o go tlamelwang ka one ga o tihole o tlhela le gore tiriso ya diteišene tsa maatla a motlakase tse di dirang fela ka nako ya fa motlakase o tlhokwa ka bontsi e fokotsega go ya selekanyong se se amogelesegang mo nakong ya go dira patlisiso ka bothata jono, kwantle ga ka ngwaga wa 2030 fa bodirelo jo bo botlhokwa jo bo fetlhang maatla a motlakase ka magala bo tla bo bo tswetswe.

5.2 Dintlha-Kakaretso Tse di Etsweng Tlhoko

Dintlha-kakaretso tse di etsweng tlhoko fa go sekasekwa maemo ka fa tlase ga Nako ya Ntlha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone di supa gore matsholo a sele a go fetlha maatla a motlakase a a tsenngwang gone jaanong a tla thusa mo go fokotseng selekanyo se se tlhokegang sa motlakase mme di tshwanetse go akaretsa motswedi wa maatla a motlakase o o rulaganyeditsweng go tlamela ka one fa a tlhokega. Seno ke ka ntlha ya bothata jo bo sa bolong go nna gone jwa tsamaiso e e fetlhang maatla a motlakase ya Aforika Borwa le dikgaogo tsa motlakase ka ntlha ya madirelo a a fetlhang maatla a motlakase ka go dirisa magala. Tsamaiso eno e tlhoka didirisiwa tse dingwe tsa go fetlha maatla a motlakase tse di dirang ka tsela e e tshwanang gore di emisetse didirisiwa tse dingwe tse di fetlhang selekanyo sa motlakase se re latlhegelwang ke sone fa tseno di palelwa ke go o tlhagisa. Go tokafatsa EAF, le go dirisa gase go fetlha motlakase go tlamela ka ditsela tseno mo tirong ya go fetlha motlakase mme ka ntlha ya moo, go bonwa tlhalelo e e kwa tlase ya selekanyo se se tlhokegang sa motlaka kgotsa ga go bonwe epe gotlhelele mo Maemong a bo Bone le a Botlhano.

Ditshekatsheko tsa digase tse di ntshediwang mo moweng tsa Nako ya Ntlha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone di bontsha gore go ntshediwa mo moweng ga digase tsa khabone go dirwa go ya ka Selekanyo sa bosetšhaba se se Tlhomilweng (National Determined Contribution [NDC]) go fitlha ka 2025 mme go tloga moo di simolola go bontsha kwelotlase e e ka fa tlase ga selekanyo sa bosetšhaba se se tlhomilweng jaaka go tshwantshitswe mo Setshwantsho 21.

Ka kakaretso, ditshekatsheko tse di fa godimo tsa Nako ya Ntlha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone di re isa kwa leanong le le latelang le le bontshitsweng go Leraanethalo 2. Leano leno le akaretsa selekanyo se se lebeletsweng sa motlakase go tswa go diyuniti tsa bofelo tse pedi tsa Kusile, mananeo a puso a ga jaanong a akaretsang BW 6, diporojeke tse di rulagantsweng le tse dikgwebo di di eteletsang kwa pele, ponelopele ya go simololwa ga motlakase o o dirisang mogote wa letsatsi o o dirisiwang ke ditheo tsa kgwebo le ke banni mo magaeng a bone. Leano le le ntšha leno

gape le bontsha tlhokego ya go nna le sefetha-motlakase se sengwe se se ntšha sa motlakase o o dirisang mogote wa letsatsi, phefo le motswedi o o dirisiwang thata wa maatla a motlakase o o rulaganyeditsweng go tlamela ka one fa a tlhokega. Le fa seno se sa umakiwa mo leanong le le ntšha leno, go lebeletswe gore go nne le motlakase o o dirisang mogote wa letsatsi le o dikgwebo di o fetlhang ka phefo mme o tla dira morago ga ngwaga wa 2027.

5.2.1. Dikgato-tharabololo tse di tshitshintsweng

Kgato-tharabololo 1: Jaaka go setse go bonwe e bile go dirilwe kgatelopele jaaka dingwe tsa dikgato-tharabololo tsa Leano la Go Tsaya Kgato ka Eneji, go tokafadiwa ga madirelo a a fetlhang motlakase a Eskom a EAF, go ya ka Leano la Tsosoloso ya Go Fetlha Maatla a Motlakase, tiro eo e botlhokwa thata e bile e tla thusa fela thata mo go fediseng dikgaogo tsa motlakase.

Kgato-tharabololo 2: Mo godimo ga go tlhoka didirisiwa tsa go fetlha motlakase tse di dirang fela ka nako ya fa re tlhabela ka one (tsa kgwebo le tsa Puso), go dirisia ditsela tsa go fetlha maatla a motlakase ka nako e o tlhokwang kwa one jaaka tsa go fetlha motlakase ka gase go ya ka Ditshwetso Tsa Lefapha tsa Karolo 34 di tshwanetse go akofisiwa ka gonne di tla rarabolola kotsi ya bothata jwa tlhabelo ya selekanyo se se tlhokegang sa motlakase e bile di ka dirwa gore di fitlhelele dipatlafalo tsa tsamaiso ya motlakase mo lobakeng lol lo khutshwane fela.

Kgato-tharabololo 3: Fa go kgonega go ya ka setegeniki le go ya ka maemo a kgwebo, go tla diegisiwa go tswala madirelo a a fetlhang maatla a motlakase a a dirisang magala go boloka motlakase o o dirang fela ka nako ya fa re tlhabela ka one.

Kgato-tharabololo 4: Go tshegetsa le go kgontsha tlhamo ya mafaratlhatlha a tlanelo ya motlakase le tsamaiso ya one go ya ka TDP 2023-2032 gore go kgonege go golaganya madirelo a mangwe a a fetlhang maatla a motlakase gore o fetlhwe ke baagi le ke setheo sa poraefete,

Kgato-tharabololo 5: Rarabolola dikotsi tse di latelang tse di tlhagang:

- Go feleletsa Katoloso ya lobaka lwa go dira ga Seteišene sa Maatla a Motlakase sa Koeberg, go feleletsa katoloso ya lobaka lwa go dira ga seteišene sa maatla a nyutleia sa Koeberg go tshwanetse ga tswela pele ka lebelo le le tlhokegang go kgatlanyetsa tatlhegelo ya maatla a motlakase a bokana ka 1 800 MW.
- Go Ikobela Ditekanyetso-Potlana Tsa go Ntshetsa Digase mo Moweng
Go rarabolola dikgwetlho tse di amanang le Go Ikobela Ditekanyetso-Potlana Tsa go Ntshetsa Digase mo Moweng

(Minimum Emissions Standards [MES]) tsa diteišene tse di fetlhang maatla a motlakase ka go dirisa magala tumalanong le Botsamaisi jwa Bosetšhaba jwa Tikologo: Molao wa Boleng jwa Mowa wa bo 39 (2004) go botlhokwa thata ka gonne go tla tlhomamisa gore re nna le selekanyo sa motlakase o o fitlhang go 16 000 MW ka bonako le le gore re nna le nale o o fitlhang go 30 000 MW ka Moranang 2025.

itshekatsheko tsa Nako ya Bobedi e Dilo Dingwe di tla Dirwang go Fitlha ka Yone (Lobaka lwa 2031 – 2050)

Go rulaganngwa ga Nako ya Bobedi e Dilo Dingwe di tla Dirwang go Fitlha ka Yone go ne ga sekaseka ditsela di le tlhano tse di tswakanyang mokgwa wa go anamisa motlakase tse boikaelelo jwa tsone e leng go laola ditlhopho kgotsa ditshwetso tsa pholisi tsa naga ya rona tsa go dira gore re nne le motlakase o o sa kgaogeng wa ka metlha. Ditsela tseno tse di tswakanyang mokgwa wa go anamisa motlakase di ne tsa lekeletsa go kopanngwa ga metswedi ya e e farologaneng ya go fetlha motlakase jaaka phefo, mogote wa letsatsi, Tsamaiso ya Bobolokelo jwa Eneji, gase, nyutlelia le dithekenoloji tsa magala a a phepa go tlhaloganya bokgakala jo di tlamelang ka motlakase o o sa kgaogeng le go fokotsa digase tse di nang le khabone tse di ntshediwang mo moweng tumalanong le boikaelelo jwa naga ya rona jwa go boloka tekatekano ya digase mo loaping.

Mokgwa o o umakilweng wa go anamisa motlakase ke o go tsewang malebela mo go one ka go o bapisa le mekgwa e mengwe ya go anamisa motlakase mme e le o o sa tureng mo go yone yotlhe, o o akanyeditseng go fokotsa digase tse di ntshediwang mo moweng. Mekgwa ya go anamis motlakase e ne ya bapisiwa go akantswe ka kgang ya go dira gore motlakase o se ka wa tlhabela, ka ditshenyego tsa tsamaiso yotlhe ka kakaretso le go fokotsa ditshenyegelo tsa go tlamela ka tlhabelo ya selekanyo se se tlhokegang sa motlakase tsa ikonomi, Mekgwa e metlhano e e tlhamilweng ya go tlamela ka motlakase e tlhalosiwa ka botlalo go Setshwantsho 11.

Pathway	Policy Guiding Principles	Energy Pathways	Comments
1	Establishing a reference for benchmarking	Reference Case	• Supply and demand balance based on least-cost. Optimisation model provided with an array of generation expansion options from which to select an optimum plan up to 2050
2	Power System Transition	Renewable Energy	• Optimize only green energy technologies and storage as candidate options; Wind (on-shore & off-shore); Solar PV; Hydro, Storage (BESS, CAES, WPS); and Bioenergy
3		Renewable Energy and Nuclear	• Optimize non-CO ₂ emitting technologies as candidate options; Wind (on-shore & off-shore); Solar PV; Hydro, Storage (BESS, CAES, WPS); Bioenergy and Nuclear (PWR & SMR)
4	Shut down of existing coal fired station post 2030	Delayed Shutdown	• Delayed shutdown of coal-fired stations earmarked to shutdown post 2035 by 10 years
5	Clean Coal	Renewable Energy and Coal	• Assess impact of new cleaner coal technologies

Setshwantsho 11: Mekgwa ya go Tlamela ka Eneji ya Nako ya Bobedi e Dilo Dingwe di tla Dirwang go Fitlha ka Yone

6.1 Dipholo tsa Dipatlisiso ka Nako ya Bobedi e Dilo Dingwe Di tla Dirwang go Fitlha ka Yone

Karolo eno e tshalosa le go sobokanya dipholo tsa dipatlisiso ka mekgwa ya go tlamela ka motlakase tse di akanyediwang mo thulaganyong ya Nako ya Bobedi e Dilo Dingwe Di tla Dirwang go Fitlha ka Yone. Dipholo tse di tseneletseng le ditshekatsheko di teng mo teng ga Mametlelelo C.

- **MOKGWA WA NTLHA WA TLAMELO KA MOTLAKSAE (KGANG E GO TSEWANG MALEBELA MO GO YONE)**

Mokgwa ono o go tsewang malebela mo go one o theilwe mo go o o lekelediwang wa tlamelo ka motlakase wa ditshenyegelo tse di kwa tlase wa motswako wa maatla a motlakase.

Dipholo tsa boemo jono di bontsha go agiwa go go tona ga sefetha-motlakase o o dirisang mogote wa letsatsi, Phefo le Gase ka nako ya fa go na le tlaleletso ya motlakase o go tlhailwang ka one kgotsa ya fa didirisiwa tsa motlakase di simolola go dira ka nako ya fa o tlhokego o le montsi. Gape dipholo tseno di supa gore go na le tlhokego ya go bo go agilwe madirelo a magolo a a fetlang maatla a motlakase ka ngwaga wa 2035 e leng lobaka lo lo fetang dingwaga di le lesome tse di tlang. Malebana le go tlamela ka motlakase o o sa tlhaileng, maatla a a

tswakantsweng a motlakase a mokgwa ono wa go tlamela ka motlase o lekane.

Kwa tshimologong, dipholo tsa mokgwa ono wa go tlamela ka motlakase o bontsha phokotsego e kgolo ya go ntshediwa mo moweng ga khabone mme seno se dirwa segolo ke go tswalwa ga madirelo a a fetlhang maatla a motlakase ka magala le go emitsa madirelo ano ka motlakase o o sa fetlhiweng ka ditukiso le o o fetlhwang ka gase. Digase tse di ntshediwang mo moweng di bontsha go oketsega go simolola ka 2042 ka gonne tiriso ya gase e tla gola thata ka ntlha ya kgolo ya selekanyo se motlakase o tla bong o tlhokwa ka sone go simolola ka mo e ka nnang ka ngwaga wa 2041.

Mokgwa ono wa tlamelo ka motlakase ke wa ditshenyegelo tse di kwa tlase ka gonne ke mokgwa o mo go one go tlhophiwang tsela ya go kopanya dithekenoloji kwa ntle ga dithibelo dipe.

- MOKGWA WA BOBEDI LE WA BORARO WA TLAMELO KA MOTLAKASE (GO FETOLA TSAMAI SOYA GO TSA MOTLAKASE)

Boikaelelo jwa mekgwa eno ya go tlamela ka motlakase ke go bona diphelelo tsa go tlamela ka motlakase o o sa kgaogeng go ya ka pholisi ya gore go dirisiwe motlakase o o sa fetlhiweng ka ditukisis le dithekenoloji tse di phepa. Mo Mokgweng wa Boraro wa Tlamelo ka Motlakase, ditsela tsa go fetlha maatla a motlakase ka Gase di letlelelwa fela go fitlha ka 2033 pele ga tiriso Mokgwa wa bobedi wa tlamelo ka motlakase ga o akaretse tiriso ya motlakase mme o akanyetsa tiriso ya bobolokelo jwa maatla a Motlakase jwa beteri, bobolokelo jo bo pompang metsi le motlakase o o tswang go ditshedi tse di suleng go tshegetsa eneji e e sa fetlhweng ka ditukisi.

Mokgwa wa bobedi wa tlamelo ka motlakase o tla bo o tthamile sefetlha-motlakase se segolo go di gaisa ka 2050 fa se bapisiwa le mekgwa e mengwe ya tlamelo ka motlakase mme seno ke ka ntlha ya go sa somarele motlakase le ka ntlha ya go tlhoka didirisiwa tsa go fetlha motlakase tse di dirang fela ka nako ya fa re tlhabela ka one kgotsa

motlakase o o sa fetlhiweng ka ditukisi. Malebana le go tlamela ka motlakase o o sa kgaogeng, mekgwa e mebedi ya go tlamela ka motlakase Mekgwa e mebedi eno ya tlamelo ka motlakase e ntsha khabone e e kwa tlase ka nako ya lobaka lwa patlisiso go fitlha ka 2050.

Mokgwa o le mongwe fela wa tlamelo ka motlakase o o sa fetlhweng ka ditukisi o na le ditshenyegelo tse di kwa godimo go feta tsotlhe fa o bapisiwa le mekgwa e mengwe ya tlamelo ka motlakase. Ditshenyegelo tsa mokgwa wa go tlamela ka maatla a nyutlelia le tsone di kwa godimo thata go feta tse go tsewang malebela mo go tsone.

- MEKGWA YA BONE YA TLAMELO KA MOTLAKASE (TIEGISO YA GO TSWALA GA YONE)

Mokgwa ono wa tlamelo ka motlakase o ne wa tlhamiwa o theilwe mo tiegisong ya go tswalwa ga madirelo a a fetlhang maatla a maatla a motlakase ka magala mo dingwageng di le lesome. Go tsaya malebela mo go seno, diteišene tse di fetlhang maatla a motlakase tse di diriseditsweng tiego ya go tswalwa ga tsone e ne e le tse di diretsweng gore lobaka lwa tiro ya tsone e nne lwa go fitlha morago ga 2035 ka maatla a motlakase a a fitlhang go 15 000 MW.

Tiegiso ya go a tswala ga madirelo ano e na le dipatlafalo tse di kwa tlase tsa go agiwa ba madirelo a masha a a fetlhang motlakase e bile madirelo ao a tlamela ka motlakase o o sa kgaogeng.

Dipholo di bontsha gore go diegisa go tswalwa ga madirelo ano kwantle ga go oketsa ka dithekenoloji go tla felela ka gore khabone e e ntshediwang mo moweng e lekane e la ka ngwaga wa 2026.

- MOKGWA WA TLAMELO KA MOTLAKASE WA BOTLHANO (DITHEKENOLOJI TSA TLHAGISO MOTLAKASE KA MAGALA A A PHEPA)

Mokgwa ono wa tlamelo ka motlakase o ikaegile ka go dirisiwa ga dithekenoloji tsa go dirisa magala a a phepa, mme a akaretsa Go Tukisa Ditukisi Tse di Thata Go Nna Sedi (fluidised Bed Combustion [FBC]) le

dithekenoloji tsa go thuga magala gore a nne leokwane ka CCUS. Ditshekatsheko ga di a naya tiriso e ntšha ya magala boleng jo bo fetang jwa 6 000 MW ka nako ya lobaka lwa patlisiso.

Mokgwa ono wa tlamelo ka motlakase o felela ka dipatlafalo tsa bobedi tse di kwa tlase tsa go aga madirelo a a fetlhang maatla a motlakase a a nang le motlakase o o sa fetlhiweng ka ditukisi, ka gase, le bobolokelo. Malebana le go tlamela ka motlakase o o sa tlhaeleng, mokgwa ono wa tlamelo ka motlakase ga o a lekana gotlhelele. Dipholo di supa mokgwa ono wa tlamelo ka motlakase gore o na le dipatlafalo tsa bobedi tse di kwa tlase tsa go aga madirelo a a fetlhang maatla a motlakase, le gore o na le digase tse di kwa tlase tse di ntshediwang mo moweng fa di bapisiwa le mokgwa wa tlamelo ka motlakase o re tsayang malebela mo go one.

6.2 Dintlha-Kakaretso Tse di Etsweng Tlhoko

- Mo lobakeng lono lwa patlisiso go bonala sentle gore mekgwa ya tlamelo ka motlakase wa dithekenoloji tse di sa diriseng ditukisi o o phepa o tlhagisa fela dipholo tse di batliwang tsa go tlosa khabone mo tsamaisong ya sefetlha motlakase. Le fa go ntse jalo, mekgwa eno ya go tlamela ka motlakase fa e kgone go tlamela ka motlakase o o sa tlhaeleng mme ditshenyegelo tsa tsone di kwa godimo thata.
- Mo lobakeng lo lo fa gare ga 2031 go ya go 2050 tsamaiso ya motlakase e tla tlhoka lenaneo la kago ya madirelo a masha a a fetlhang motlakase a a tla tlamelang ka selekanyo se se lekaneng se se tlhokegang sa motlakase mo lobakeng lwa dingwaga di feta lesome go tlosa jaanong. Seno se raya gore go agiwa ga madirelo ano a a tlamelang ka motlakase o o tlhokegang mo lobakeng loo lwa nako go akaretse le mafaratlhatlha a a amanang le one a a tsamaisang motlakase go tshwanetse ga simolola ka bonako.
- Mekgwa ya tlamelo ka motlakase ya dithekenoloji tse di tlamelang ka motlakase tse di dirang fela ka nako ya fa re tlhabela ka one di tlamela ka motlakase o o sa kgaotseng. Kwantle ga tiegiso ya go tswalwa madirelo, dithekenoloji tseno di akaretse dilo tse di farologaneng jaaka nyutlelia, motlakase o o fetlhwang kwantle ga tiriso ya ditukisi, magala a a phepa le

gase. Gantsi ditsela tseno tsa tlamelo ka motlakase di tshegetsisa boikemisetso jwa go fokotsa khabone.

- Go bonala sentle go tswa mo ditshekatshekong tse di dirilweng le m,o dilong tse di etsweng tlhoko tse di fa godimo gore morago ga 2030, tsela ya go tlamela ka motlakase e e tla tlhomamisang gore re na le motlakase o o sa tlhaeleng, e e tla fokotsang digase tsa khabone, le go tlhomamisa gore ditshenyegelo tsa teng ke tse di kwa tlase e tla bo e le ditshekatsheko tse di kopantsweng tsa thekenoloji (go aga tsamaiso ya tsa motlakase le e go ka tsewang malebela mo go yone) le go fetola pholisi e e akanyetsang dilo tse di akanyeditsweng tsa go tsenya thulaganyo eno mo tirisong

onelo

Poeletso eno ya IRP e na le ditshekatsheko tsa ditlhopho tse dintsi tse di ka dirisiwang ke naga ka boikaelelo jwa go fitlhelela mekgele e meraro e e tlhomologileng le fa e se yone fela, e leng, tlamelo ka motlakase o o sa thaeleng, eneji e e sa tureng le phokotso ya digase tsa khabone tse di ntshediwang mo moweng. Ditshekatsheko tsa lobaka lo lo fa gare ga lwa jaanong le lwa ngwaga ya 2030 di supa maemo a a sa jeseng di welang ka tlamelo ya motlakase le tlhaelo ya selekanyo se se tlhokegang sa motlakase. E re ka go lebeletswe madirelo a a tswelelang pele go fetlha motlakase go fokotsa tlhaelo ya selekanyo se se tlhokegang sa motlakase, madirelo ano ga a rarabolole ka botlalo bothata jwa go sa dire ka botlalo ga tsamaiso ya tsa motlakakse.

Mekgwa ya go tlamela ka motlakase le ditsela dingwe di sele tse go dirilweng patlisiso ka tsone di bontsha gore go tlhokega ditshwetso tse di gagametseng tse di theilweng go dipatlafalo tsa tsamaiso ya tsa motlakase, mme le fa go ntse jalo, mekgwa eno e kgorelediwa ke mathata mangwe a pholisi a a batlang gore go dirwe ditshwetso dingwe ka mokgwa o o lekalekaneng. Ditshwetso tsa bofelo tsa pholisi di tshwanetse go dirwa ka boikaelelo jwa go fokotsa khabone e e sa bolong go nna teng le go tokafatsa ditlhwatlhwa tsa mo Aforika Borwa, go godisa ikonomi ka tlhabololo ya intaseteri jaaka go tlhalosiwa go NDP

etswedi-tshedimosetso

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- [9] NERSA SAGC, khouto ya Tiro ya Tsamaiso ya Khouto ya Mafaratlhatlha a Tlamelo ya Motlakase Ya Aforika Borwa, Rev 10, 2022. <https://www.nersa.org.za/wp-content/uploads/2021/08/SAGC-Preamble-Version-10.pdf>

imametelelo

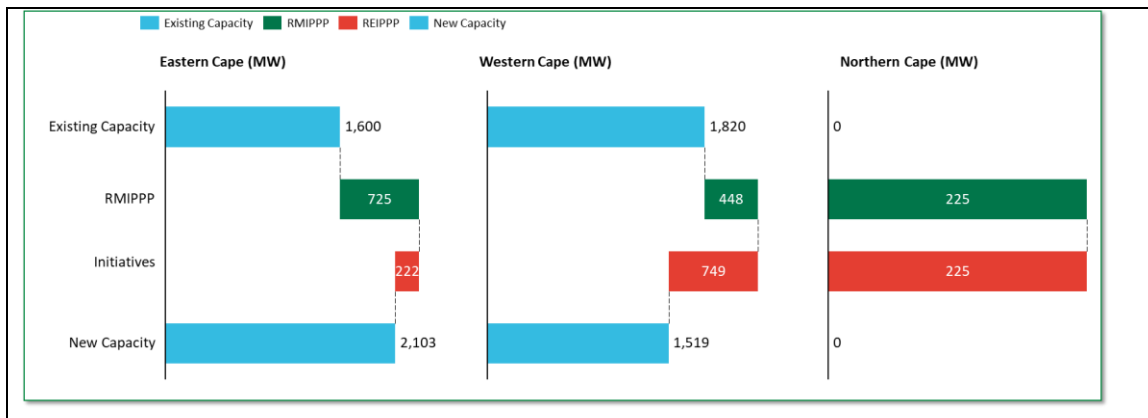
MAMETLELELO A: Go nna le Motlakase o o Lekaneng mo teng ga Mafaratlhatlha a Tlamelo ya Motlakase kwa Kapa Dingwaga di le Dintsi: 2024, 2027 le 2030

Go tihomamisa gore go na le motlakase o o lekaneng mo teng ga Mafaratlhatlha a Tlamelo ya Motlakase gore a gokaganngwe le difetlhamotlakase tse dintšha mo mafelong a Kapa a motlakase o imelwang thata mo go one, IRP 2023 e ne ya dirisa maemo a a latelang gore go tsewe malebela mo go one:

- Diporojeke tsotlhe tse di santseng di dirwa ka Seetebosigo 2023.
- Diporojeke tse di fitlhileng mo nakong ya go ntsha pego ka madi a tsone, tse di amogetsweng semmuso ke EIA; le
- Diporojeke tsa go dira mafaratlhatlha a tlamelo ya motlakase a a nang le Motlakase o o lekaneng mo teng ga one.

Maemo ano a ne a fokotsa selekanyo sa maatla a motlakase mo teng ga mafaratlhatlha a tlamelo ya motlakase mo diporofenseng tse di farologaneng go tihomamisa go simololwa ga diporojeke tse di siametseng go tsengwa tirisong jaaka go tshwantshitswe go Setshwantsho 12 le go tlosa diporojeke tse dingwe mo teng ga mafaratlhatlha a tlamelo ya motlakase, tse di sa fitlheleleng maemo a a kailweng fa godimo. Go tlhamiwa ga mafaratlhatlha a tlamelo ya motlakase le tsamaiso ya one go fitlha ka 2032 go ya ka TDP go a

akanyediwa e bile go tla dira gore mafaratlhatlha a tlamelo ya motlakase a golagangwe le maatla a a lekaneng a motlakase.





Setshwantsho 12: Go nna le motlakase o o lekaneng mo teng ga mafaratlhatlha a tlameo ya motlakase kwa Kapa ka 2024, 2027& 2028

Mametelelo B: Tiriso ya ditešene tsa maatla a motlakase tse di dirang fela ka nako ya fa o tlhokwa ka bontsi (%) ka Nako ya Ntlha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone

Mametelelo eno e supa dintlha tsa tiriso ya ditešene tsa maatla a motlakase tse di dirang fela ka nako ya fa o tlhokwa ka bontsi ka Nako ya Ntlha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone (Lobaka kwa ka 2023 go fitlha go 2030)

Tiriso ya ga jaanong ya digase ke palogare e e fopholeditsweng ya Acacia, Ankerlig, di DMRE Tse di Dirang fa Motlakase o Tlhokwa ka Bontsi, Gourikwa le Port Rex. Gase e Ntšha e raya Gase ya DMRE REIPPPP, Eskom Richards Bay le Gase ya RMIPPPP.

Lenaanethalo 3: Dintlha Tsa Tiriso ya ga Jaanong ya Digase

Bomasisi		2023	2024	2025	2026	2027	2028	2029	2030
Motswedi-Tshedimose tso		77.50	78.79	72.49	70.38	71.14	77.14	79.57	87.86
Motswedi-Tshedimose tso + Kgonego e Kgolo ya Madirelo		77.50	78.79	72.43	70.48	71.14	77.14	79.57	87.86
Motswedi-Tshedimose tso + Madirelo Otlhe		77.53	78.75	72.49	70.38	70.83	69.06	63.69	80.30
Motswedi-Tshedimose tso + Gase	Gase e e Leng Teng	84.44	87.04	84.47	87.73	85.11	18.03	25.85	73.38
	Gase e Ntšha	-	-	-	42.50	65.77	72.88	76.44	86.71
Motswedi-Tshedimose tso + Tsosoloso		26.31	2.65	1.60	2.00	2.69	5.81	10.52	46.90

Mametlelelo C: Dipholo Tse di Tseneletseng tsa Setegeniki tsa Tshekatsheko ya Mekgwa ya Tlamelo ka Motlakase ya Nako ya Bobedi e Dilo Dingwe Di tla Dirwang go Fitlha ka Yone (Lobaka lwa 2031 – 2050)

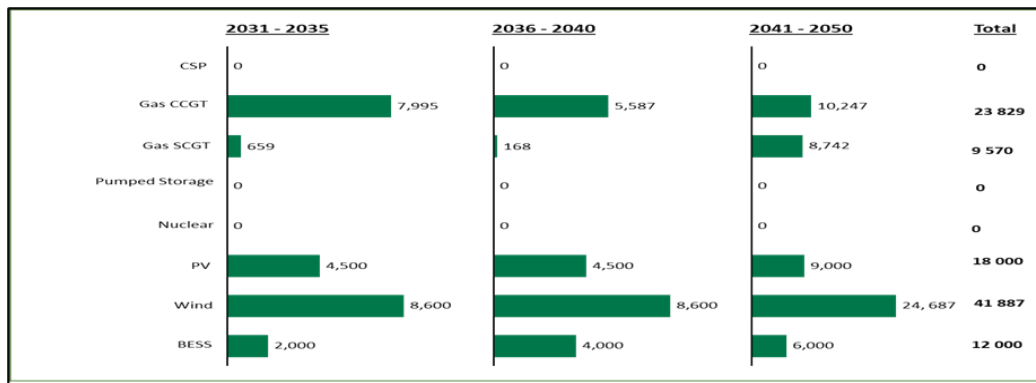
Mametlelelo eno e tlamela ka ditshekatsheko go ya pele tse di amanang le Nako ya Bobedi e Dilo Dingwe Di tla Dirwang go Fitlha ka Yone le maano a a tseneletseng a katoloso ya selekanyo se se tlhokegang sa motlakase, tlhalelo ya selekanyo se se tlhokegang sa motlakase, digase tsa khabone tse di ntshediwang mo moweng le ditshenyegelo tsa tsamaiso ya mekgwa ya go tlamela ka motlakase.

- a) Kgetsi e go tsewang malebela mo go yone (Mokgwa wa Ntlha wa Tlamelo ka Motlakase)

Tshekatsheko ya mokgwa ono wa tlamelo ka motlakase e ne ya senola selekanyo se se ntšha sa motlakase se se tlhokegang go tlamela ka motlakase o o sa kgaogeng mo lobakeng lwa 2035 ka mokgwa o o latelang:

- Gase ka nako ya fa go na le tlaleletso ya motlakase o go tlhalelwang ka one (CCGT), e e fetang 7 000 MW,
- 4 500 MW ya phefo,
- Selekanyo se se fetang 4 000 MW sa PV le sa 2 000 MW ya BESS.

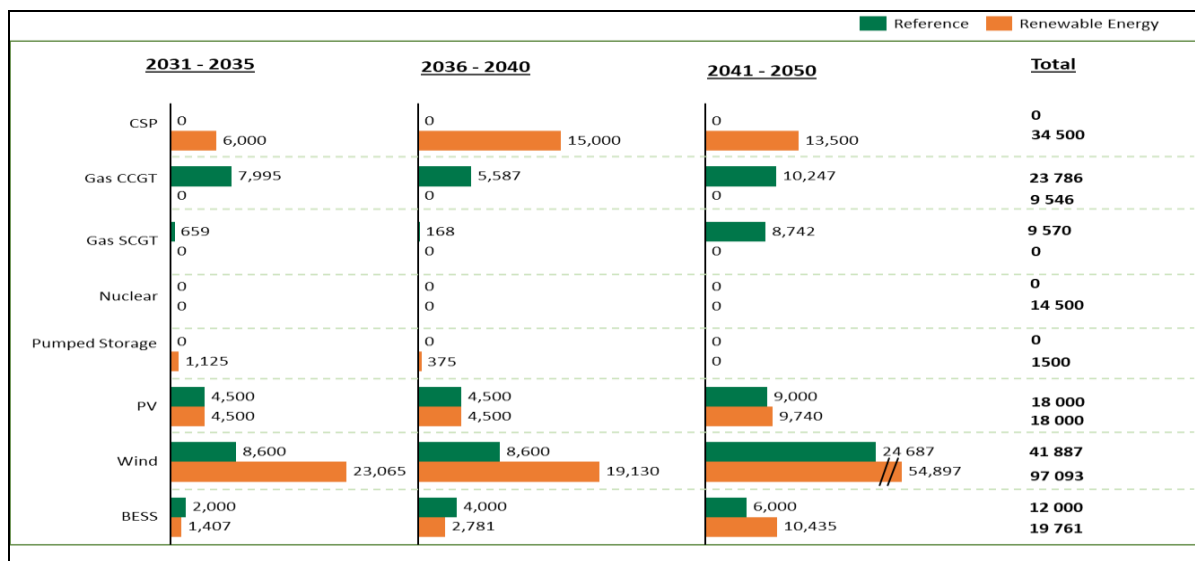
Mo lobakeng lo lo fa gare ga 2036 le 2050 go tlhokega selekanyo se se fetang 15 000 MW sa CCGT, se se fetang 30 000 MW sa phefo le sa 10 000 MW sa BESS Setshwantsho 13.



Setshwantsho 13: Mokgwa wa Tlamelo ka Motlakase o go Tsewang Malebela mo go One wa sefetha-motlakase se sesha

b) Motlakase o o sa Fetlhiweng ka Ditukisi (Mokgwa wa Bobedi wa Tlamelo ka Motlakase)

Mokgwa ono wa tlamelo ka motlakase o bontsha selekanyo se sesha sa maatla a motlakase a bokana ka 166 000 MW ka 2050, jaaka go tshwantshitswe go Setshwantsho 14. Selekanyo seno se akaretsa phefo, motlakase wa mogote wa letsatsi, gase le bobolokelo.

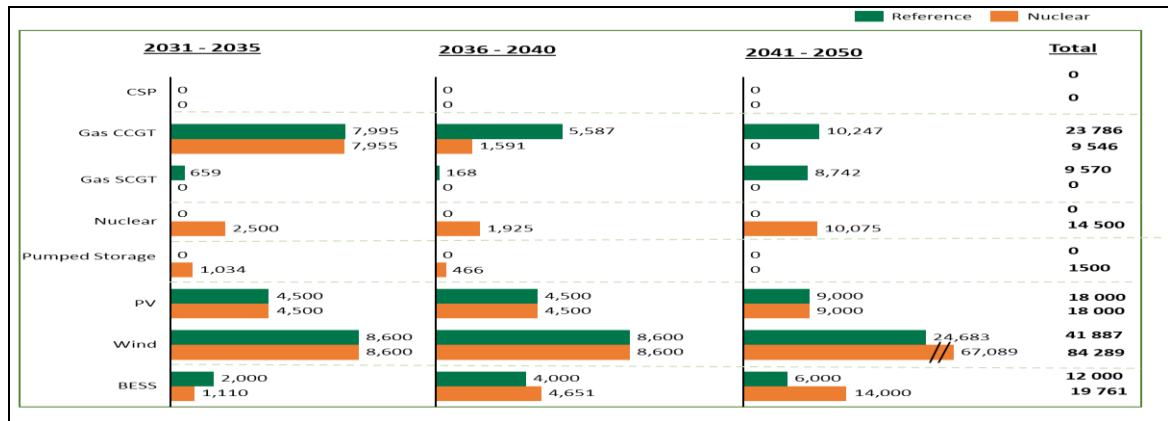


Setshwantsho 14: Tlamelo ka Motlakase Dipholo tse pedi

c) Maatla a Motlakase a a sa Fetlhiweng ka Ditukisi & Nyutlelia (Mokgwa wa Boraro wa Tlamelo ka Motlakase)

Ditshaketsheko tsa mokgwa ono wa tlamelo ka motlakase di ne tsa supa selekanyo sa maatla a masha a nyutlelia a 4 000 MW ka 2040 ke selekanyo se sengwe gape sa maatla a nyutlelia se se fitlhang go 14 500 MW ka 2050. Gantsi, dipholo tsa mokgwa wa tlamelo ka motlakase di ne di bontsha

selekanyo se sesha sa phefo sa 67 000 MW le 14 000 MW ya BESS jaaka go tshwantshitswe go Setshwantsho 15.

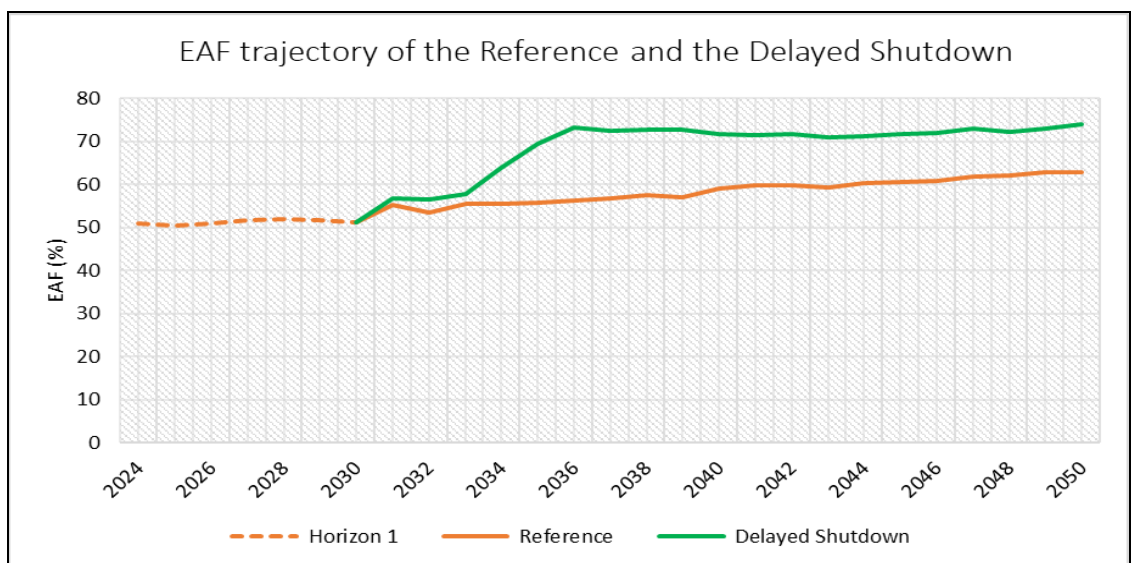


Setshwantsho 15 Mokgwa wa Tlanelo ka Motlakase Dipholo tse tharo

d) Tiego ya Go Tswalwa ga Madirelo (Mokgwa wa Bone wa Tlanelo ka Motlakase)

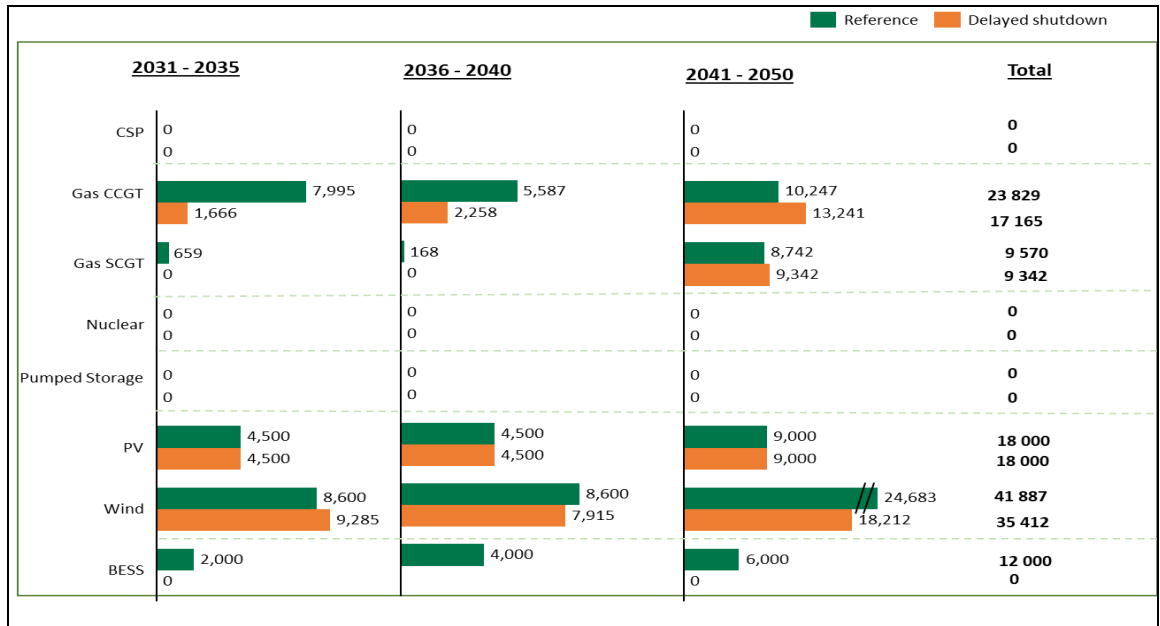
Go nna kelotlhoko go leba bokgakala jo Leano la Tsosoloso ya Go Fetlha Maatla a Motlakase le rarabololang bothata jwa go tlanelo ka motlakase o o sa kgaotseng mo thulaganyong eno ya tlanelo ka maatla a motlakase, Tshekatsheko ya IRP e bona go le botlhale go tsosolosa boemo jwa EAF ka iketlo jo bo tokafalang go nna boemo jo bo kwa godimo jwa EAF go simolola ka 2031.

Dipholo, tse di theilweng mo bogolong jwa diyuniti tsa diteišene tseno, ke tokafatso ya EAF e e yang kwa godimo ga 70% go simolola ka 2036 jaaka gotshawntshitswe go Setshwantsho 16.



Setshwantsho 16: Tokafatso ya diphopholetso tsa EAF tsa Tiegiso ya Go Tswalwa ga Bodirelo Jwa Go Tlamela ka Motlakase

Tshekatsheko ya mokgwa ono wa tlamelo ka motlakase e bontsha patlafalo e ntšha ya bodirelo jwa go fetlha maatla a motlakase wa bokana ka 4 000 MW ya CCGT ka 2040 jaaka go tshwantshitswe go Setshwantsho 17. Seno ke ka ntlhaya tiegiso ya go tswalwa ga madirelo a a fetlhang maatla a motlakase a diteišene tse tlhano. Seno se fokotsa patlafalo ya go dirisa gase e ntsi thata ka mo e ka nnang nngwetharong ya patlafalo ya Mokgwa wa go Tlamela ka Motlakase o go Tsewang Malebela mo go One. Go ya pele, ga go na patlafalo ya selekanyo sa BESS fa se bapisiwa le 6 000 MW mo Mokgweng wa go Tlamela ka Motlakase o go Tsewang Malebela mo go One.

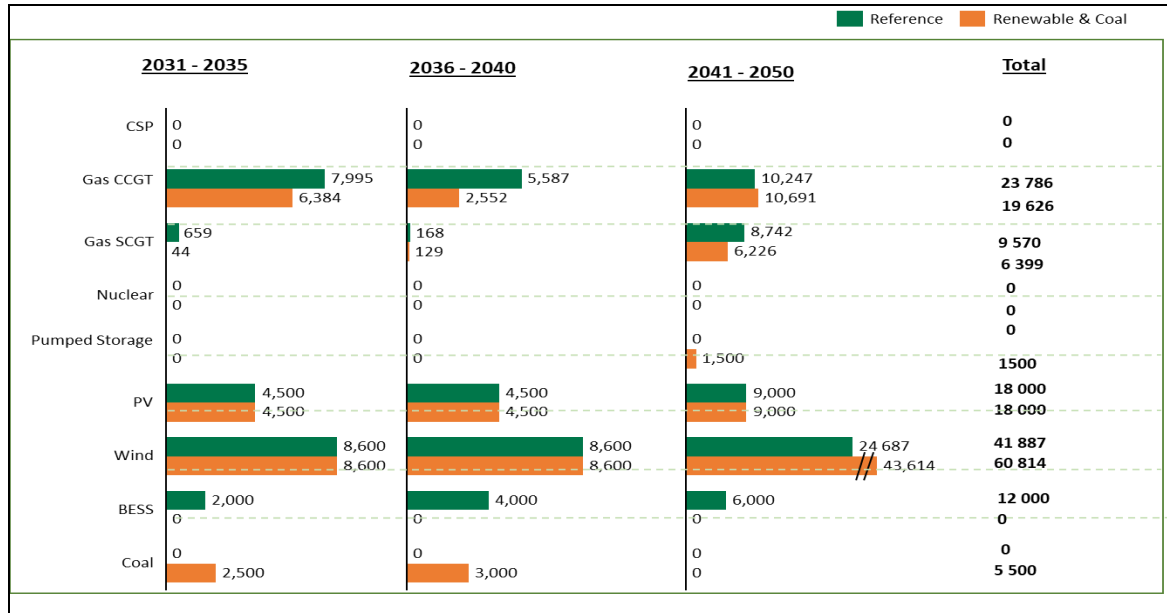


Setshwantsho 17: Tiegiso ya Go Tswalwa ga Bodirelo Jwa Magala Jwa Go Tlamela ka Motlakase

e) Maatla a Motlakase o o sa Fetlhiweng ka Ditukisi & Magala (Mokgwa wa bo 5 wa Tlamelo ka Motlakase)

Dipholo tsa go dirwa ga mokgwa ono wa tlamelo ka motlakase di bontsha selekanyo sa maatla a motlakase o o fetlhiwang ka magala o o kana ka 5 000 MW wa dithekenoloji tse di phepa tse di ntšha tsa magala wa ka 2040. Mo godimo ga moo, boemo jono bo supile 60 000 MW ya maatla a motlakase a a tla bong a fetlwa ka phefo ka 2050 jaaka go tshwantshitswe

go Setshwantsho 18. Ga go na selekanyo sa motlakase sa BESS se se tlokegang mo Mokgweng ono wa Tlamelo ka Motlakase.



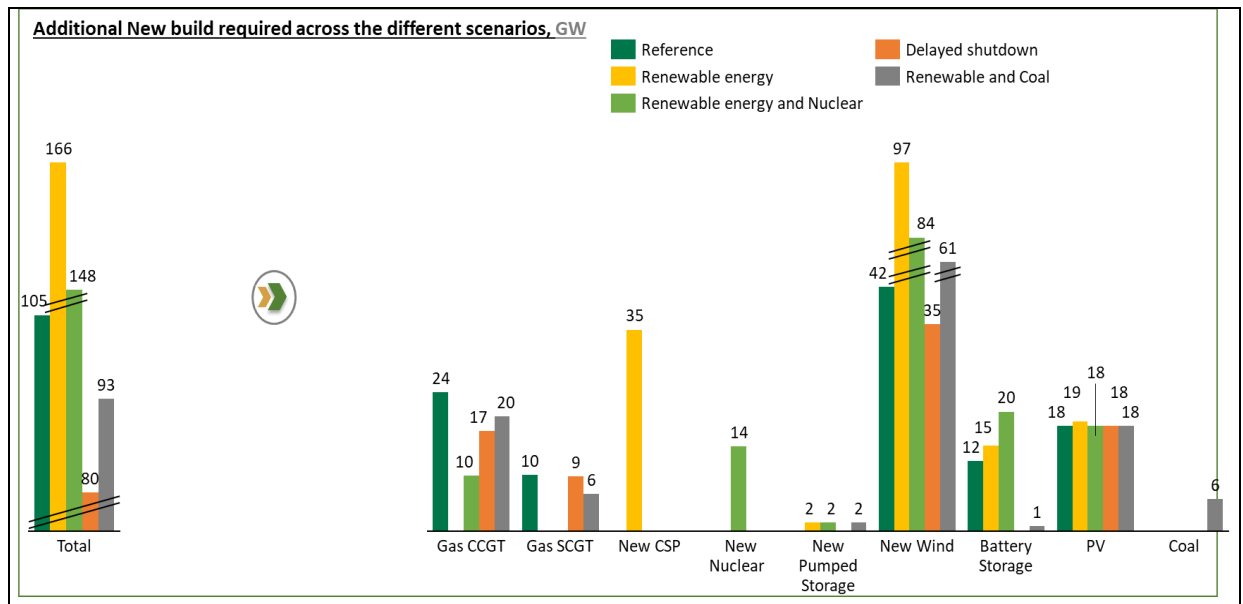
Setshwantsho 18: Dipholo Tsa Mokgwa wa Borataro wa Tlamelo ka Motlakase

Dilo tse di etsweng tlhoko ka kakaretso tsa kago ya madirelo a masha a a fetlhang motlakase

Tshobokanyo ya kago e nngwe gape ya madirelo a masha a a fetlhang motlakase mo gare ga Mekgwa e mengwe yotlhe ya tlamelo ka motlakase jaaka go tshwantshitswe go Setshwantsho 19. Go dirwa ditshitshinyo tse di latelang:

- Leano la Ditshenyegelo Tse di Kwa Tlase la kago ya madirelo a masha a a fetlhang motlakase o o kana ka 105 000 MW fa Mokgwa wa Tlamelo ka Motlakase o o sa Fetlhweng ka Ditukisi one o ne o tlhoka 166 000 MW ya selekanyo se sesha sa maatla a motlakase.
- Ditiegiso Tse Pedi Tsa Go Tswalwa ga Mokgwa wa Tlamelo ka Motlakase; le Tiegiso ya Go Tswalwa ga Bodirelo jo bo Tlamelang ka Motlakase le Kago e Ntšha ya Bodirelo Jwa go Fetlha Maatla a Masha a Motlakase a a kana ka 80 000 MW ka 2050 e leng selekanyo se se kwa tlase go di gaisa tsoitlhe sa maatla a masha a motlakase mo lobakeng lono.

- Ke Mokgwa wa Tlanelo ka Motlakase o o sa Fetlhiweng ka Ditukisi fela o o Agang CSP e ntšha.
- Ke Motlakase o o sa Fetlhiweng ka Ditukisi Fela, Motlakase o o sa Fetlhiweng ka Ditukisi le Nyutlelia e Ntšha; le Motlakase o o sa Fetlhiweng ka Ditukisi le Mekgwa ya Tlanelo ka Motlakase o o Fetlhiwang ka Magala, go agiwa ga dipompo tse dintšha tsa metsi, thekenoloji ya bobolokelo.

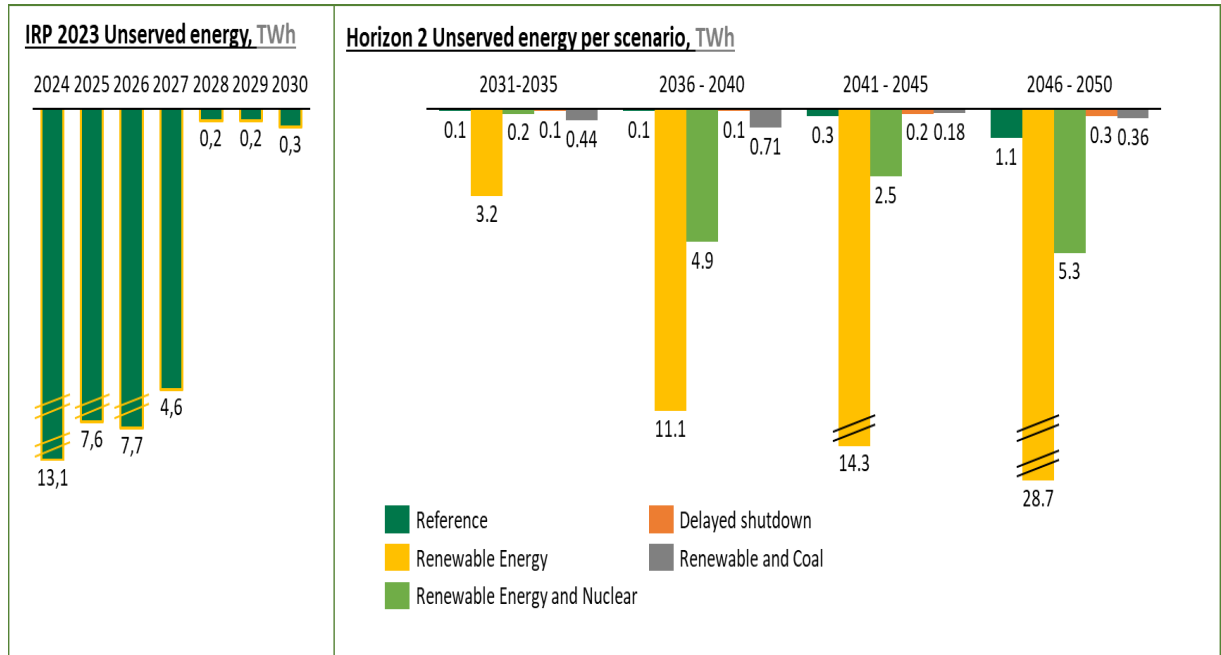


Setshwantsho 19: Tshobokanyo ya kago e ntšhaya bodirelo bongwe le bongwe jwa motlakase

Mekgwa ya Tlanelo ka Motlakase o go TIhaelwang ka One

Karolo eno e sobokanya maemo a tlanelo ka motlakase o o sa kgaogeng go tswa go difetlha-motlakase tse di farologaneng tse go dirilweng patlisiso ka tsone mo lobakeng lono (Leba Setshwantsho 20):

- Mekgwa ya go fetola tsamaiso ya motlakase e e itebagantseng fela le go tlosa khabone mo tsamaisong ya go fetlha motlakase ga e tlamele ka motlakase o o sa kgaogeng.
- Mekgwa e mengwe yotlhe ya tlanelo ka motlakase e tsosolosa tlanelo ka motlakase o o sa kgaogeng go simolola ka 2031 go fitlha ka 2050.

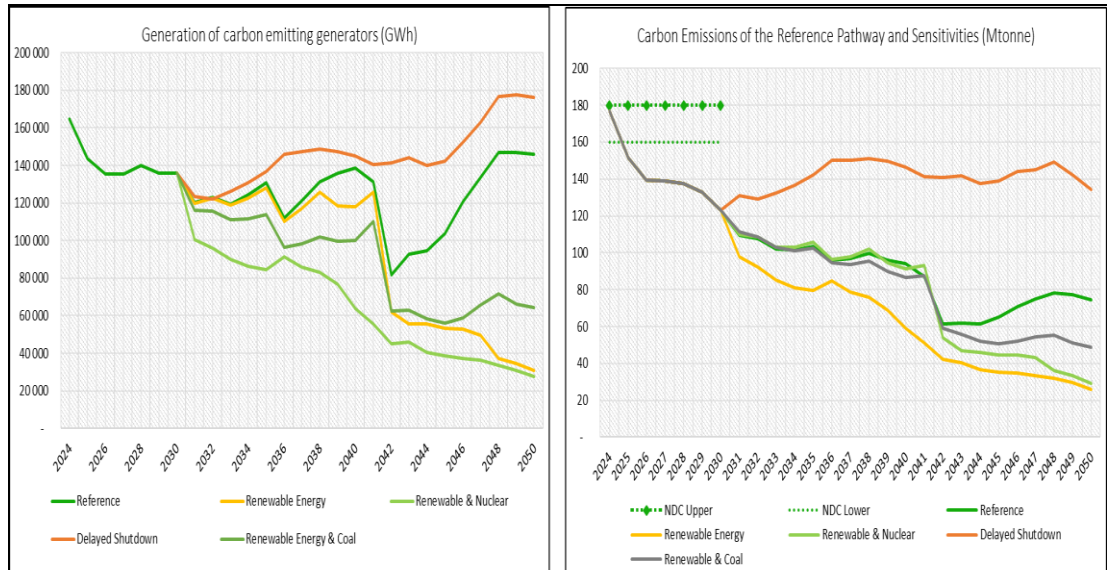


Setshwantsho 20: Tlhaelo ya Selekanyo se se Tlhokegang sa Motlakase jaaka bosupi jwa tlamelo ka motlakase o o sa kgaogeng

Madirelo a a Fetlhang Maatla a Motlakase a a Ntshetsang Khabone mo Moweng

Tlhaagisi ya Eneji ya Difetlha-Motlakase tse di farologaneng tse di amanang le go ntshetsa digase mo moweng di bontshiwa go Setshwantsho 21 mme di felela ka dintlha tse di latelang tse di etsweng tlhoko:

- Ditshekatsheko tsa digase tse di ntshediwang mo moweng tsa Nako ya Ntlha e Dilo Dingwe di tla Dirwang go Fitlha ka Yone di bontsha gore go ntshediwa mo moweng ga digase tsa khabone go dirwa go ya ka Selekanyo sa bosetšhaba se se Tlhomilweng (National Determined Contribution [NDC]) go fitlha ka 2025 mme go tloga moo di simolola go bontsha kwelotlase e e ka fa tlase ga selekanyo sa bosetšhaba se se tlhomilweng.
- Mo ditshekatshekong tsa tiego ya go tswalwa ga difetlha-motlakase le go di emisetsa ka tse dingwed, patlisiso e ile ya supa gore digase tsa khabone tse di ntshediwang mo moweng di nna di le dintsi mo lobakeng lotlhe lwa patlisiso.
- Ka kakaretso, go fetolwa ga tsamaiso ya maatla a motlakase go ne ga ntshetsa digase tse di kwa tlase tsa khabone mo moweng.

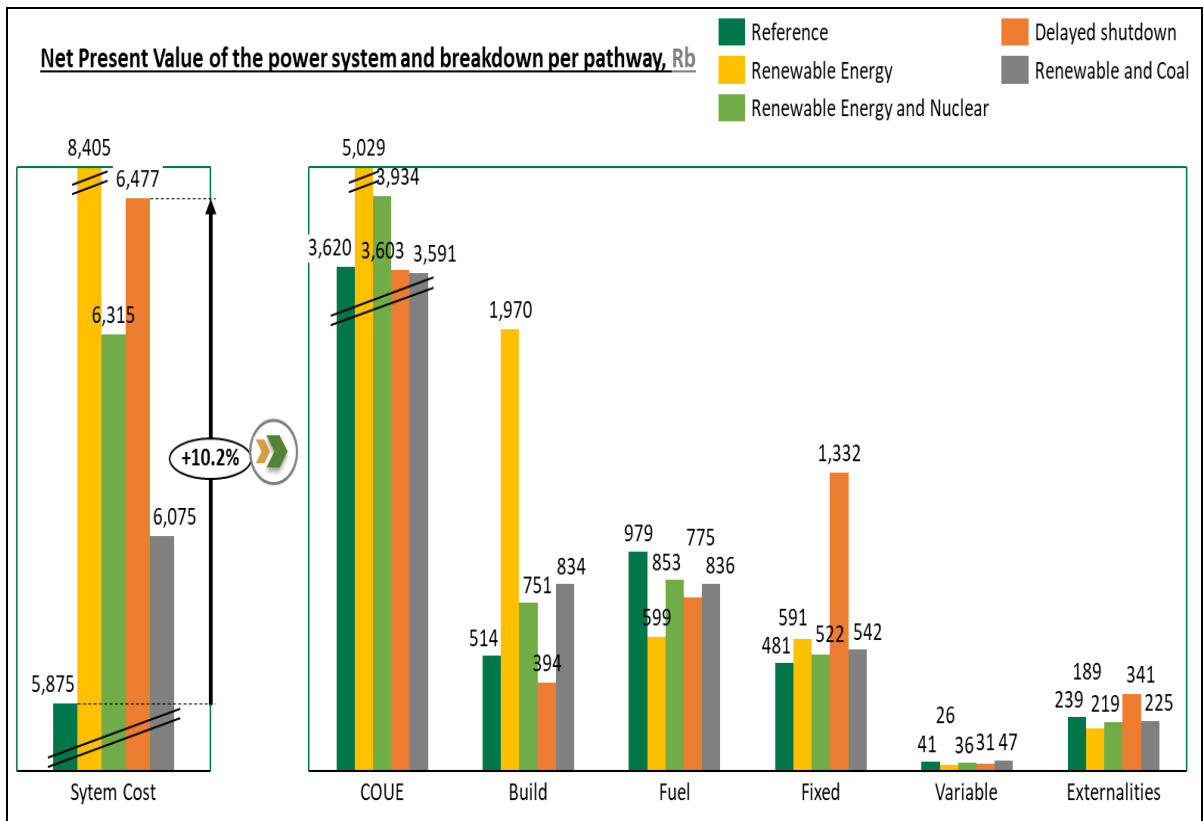


Setshwantsho 21: Ditshekatsheko Tsa go Ntshediwa ga Digase Tsa Khabone mo Moweng ka Lobakeng Iwa Dinako Tse Pedi

Ditshenyelo Tsa Tsamaiso Yotlhe ka Kakaretso

Ditshenyegelo tsa ga jaanong tsa boleng jotlhe jwa difetlha-motlakase tse di farologaneng, tse di bontshitsweng mo ditumalanong tsa ditšhelete tsa 2024, di bontsha dintlha tse di latelang tse di etsweng tlhoko (leba Setshwantsho 22):

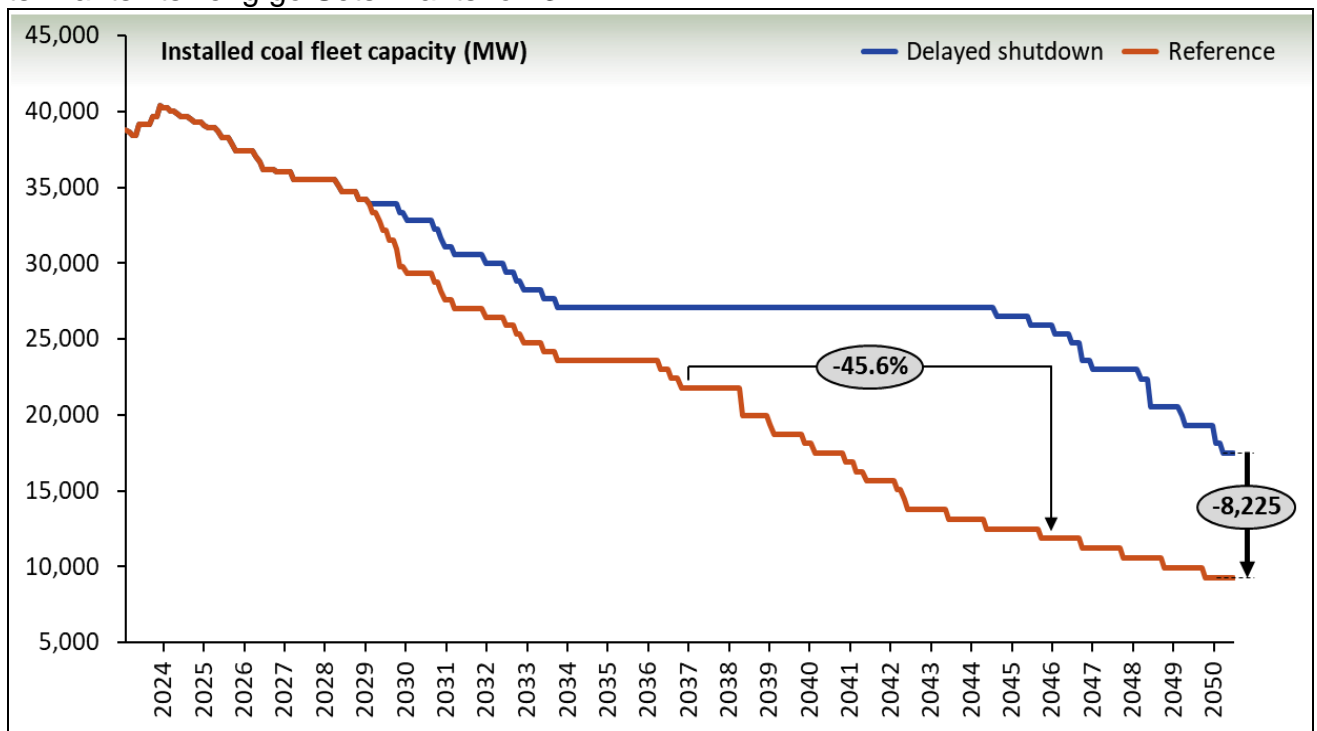
- Sefetlha-motlakase se re tsayang malebela mo go sone se supa ditshenyegelo tse di kwa tlase tsa difetlha-motlakase tsoitlhe.
- Dipholo tsa go fetolwa ga difetlha-motlakase di bontsha gore difetlha-motlakase tseno ke tsa ditshenyegelo tse di kwa godimo ka ntlha ya tlhalelo ya selekanyo se se tlhokegang sa motlakase se se kwa godimo le ditshenyegelo tsa go agiwa ga madirelo a masha a go fetlha motlakase.
- Ka ntlha ya bogolo jwa pharologano ya ditshenyegelo tsa tsone, motlakase o o sa fetlhiweng ka ditukisi le nyutlelia, tiegiso ya go tswalwa ga madirelo a a fetlhang motlakase, le tlhokego ya go emisetsa madirelo a bogologolo ka a masha a dira gore re dire dipatlisiso tsa setegeniko le tsa ikonomi go ya pele go tlhomamisa ditshenyegelo tsa didirisiwa tseneo.



Setshwantsho 22: Ditshenyegelo tsa didirisiwa tsa maatla a motlakase tse di amanang le difetlha-motlakase tse re dirileng patlisiso ka tsone

Mametlelelo D: Ditlamorago Tsa Tiego ya Go Tswalwa ga Difetlha-Motlakase mo Diteišeneng tse di fetlhang motlakase ka magala.

Tiegiso ya go tswalwa ga diteišene tse tlhano tsa konokono tse lobaka lwa tsone lwa tiro lo felang morago ga dipholo tsa ka 2035 tsa maatla a motlakase a a tla bong a feta 8 000 MW ka 2050 fa a bapisiwa le a go tsewa Malebela mo go one a a tshwantshitsweng go Setshwantsho 23.



Setshwantsho 23: Ditlamorago tsa tiegiso ya go tswalwa ga madirelo a a tlhomilweng



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