

SACAFMA

24 JULY 2009

ESKOM PRESENTATION

BY KOOS JORDAAN



CONTENTS

Ç RECOVERY PLAN

Ç SUPPLY AND DEMAND

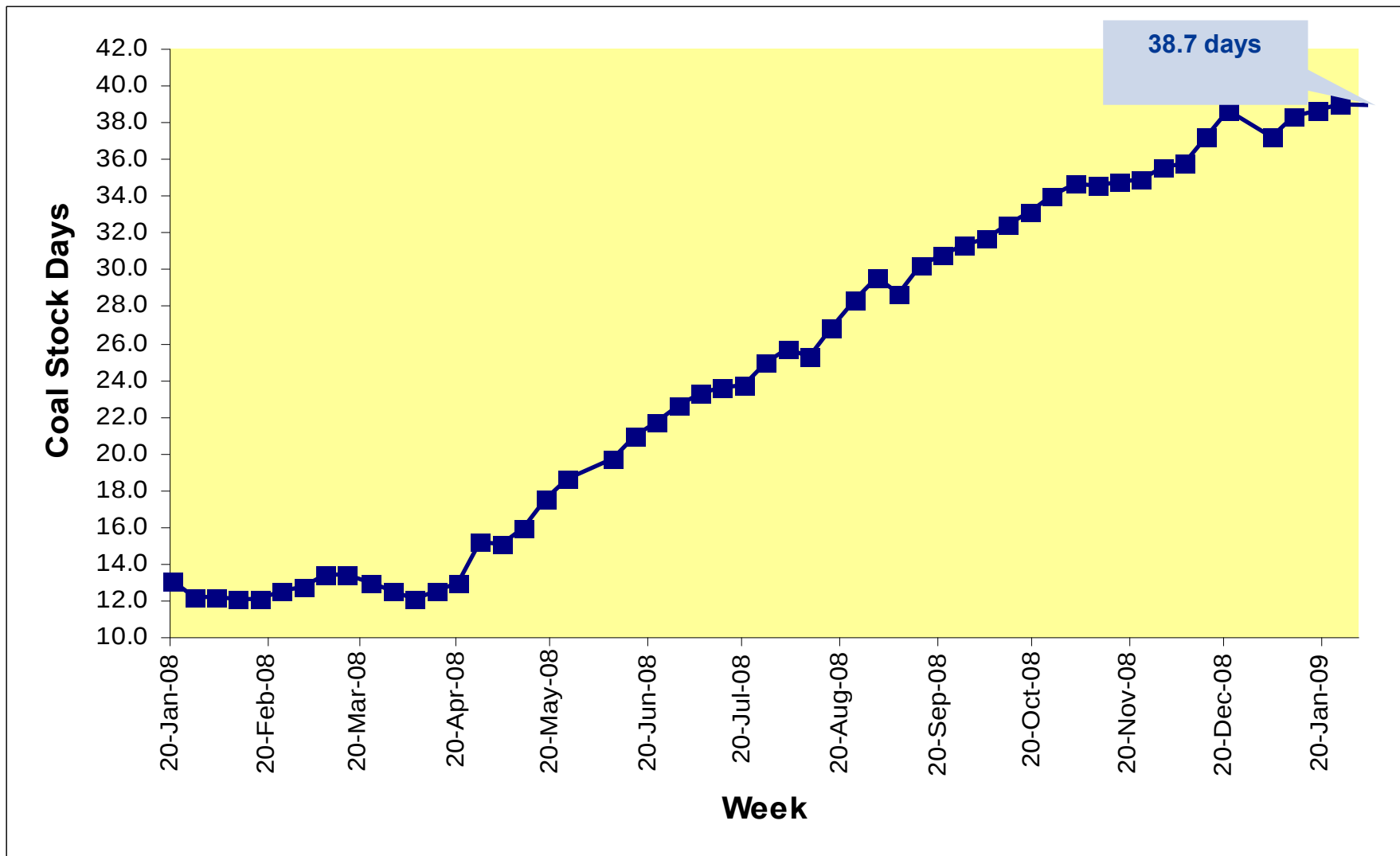
Ç COAL QUALITIES/ LOAD LOSSES

Ç ENVIRONMENTAL

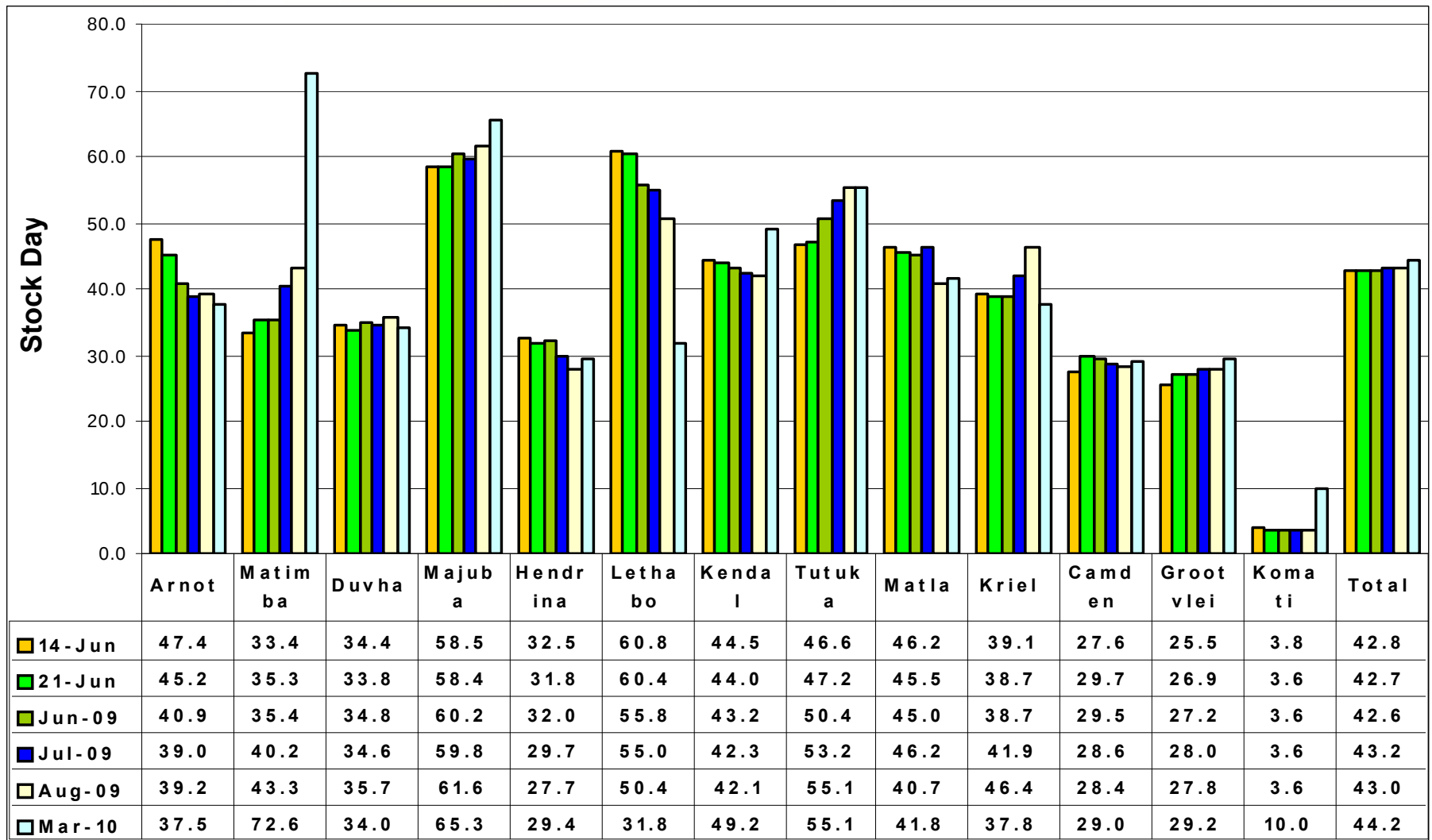
Ç COST REDUCTION

STATE OF THE POWER SYSTEM: COAL SUPPLY TREND – JAN '08 TO JAN '09

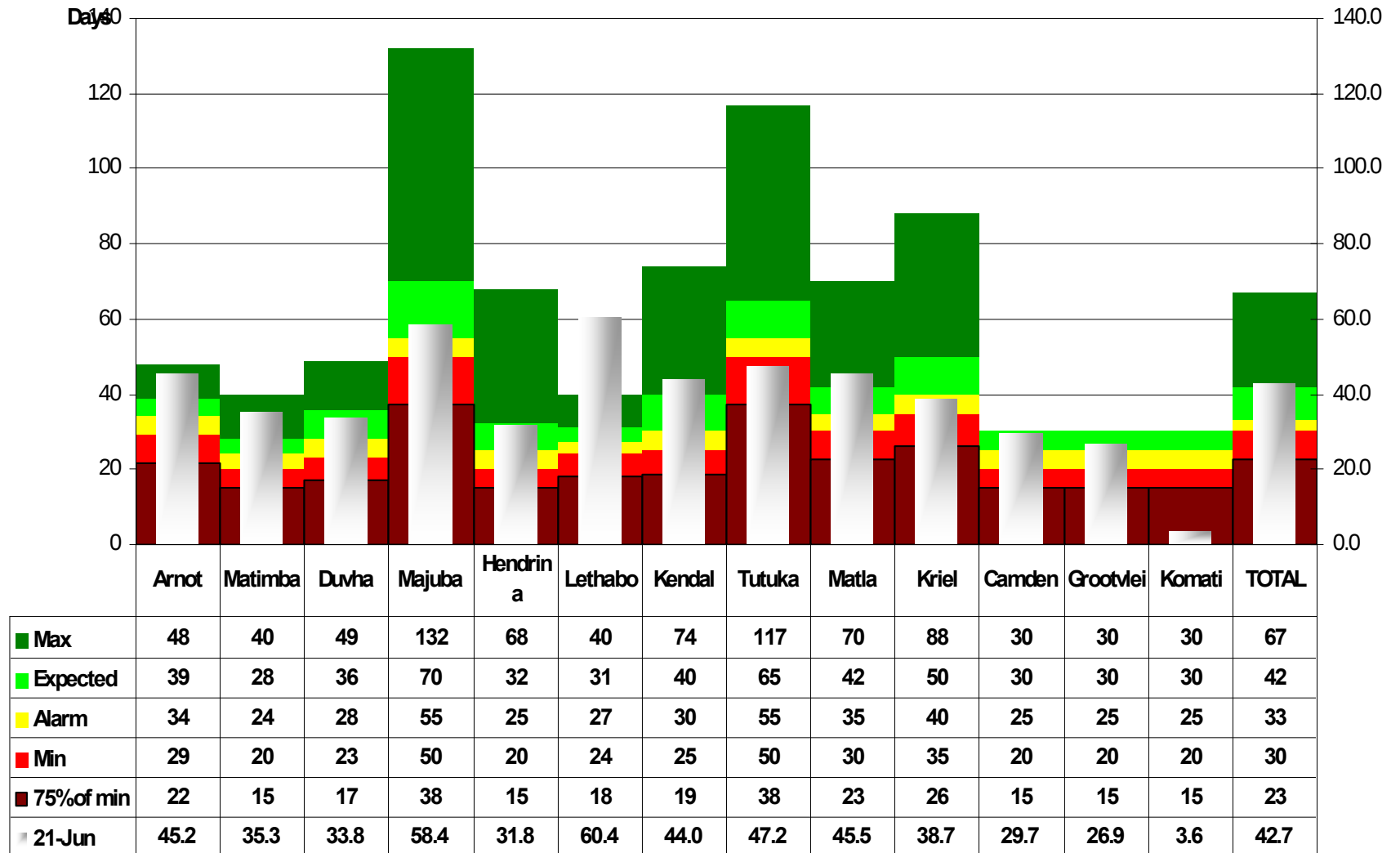
- Average coal stockpile levels are at 38.7 days with every power station having stockpile levels above 20 days
- Stations vulnerable to rain have stockpiles of about 5 days of coarse coal treated with chemicals to resist moisture ingress



CURRENT STATUS: STOCK DAYS



STOCK DAY LEVELS



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Ç ENVIRONMENTAL

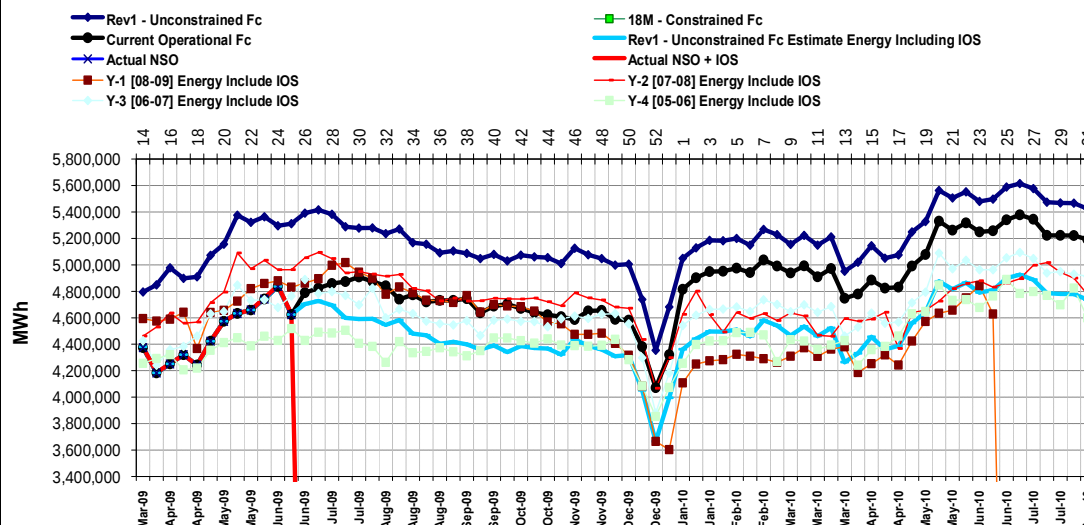
Ç COST REDUCTION

Actual Demand (Energy)

Week: 25 Calendar Year System Energy (MWh) I % Diff with Base Year: 2008

Week	2006	2007	2008	2009	W-W	Y-Y YTD
1	4,072,147	4,182,748	4,297,366	3,603,393	-16.15%	-16.15%
2	4,256,171	4,540,734	4,625,262	4,108,176	-11.18%	-13.57%
3	4,397,665	4,620,125	4,800,263	4,249,144	-11.48%	-12.84%
4	4,425,580	4,663,587	4,623,876	4,274,432	-7.56%	-11.51%
5	4,427,409	4,666,491	4,491,704	4,282,825	-4.65%	-10.16%
6	4,487,826	4,681,717	4,640,413	4,323,327	-6.83%	-9.60%
7	4,489,630	4,646,625	4,594,899	4,308,925	-6.22%	-9.12%
8	4,469,930	4,735,505	4,631,085	4,289,842	-7.37%	-8.89%
9	4,268,119	4,700,449	4,578,566	4,263,108	-6.89%	-8.67%
10	4,433,941	4,645,497	4,637,547	4,308,992	-7.08%	-8.51%
11	4,424,100	4,698,097	4,613,066	4,372,833	-5.21%	-8.21%
12	4,361,337	4,641,328	4,466,605	4,307,140	-3.57%	-7.83%
13	4,393,615	4,684,880	4,460,137	4,363,279	-2.17%	-7.41%
14	4,426,556	4,461,357	4,593,748	4,380,999	-4.63%	-7.21%
15	4,241,138	4,529,656	4,575,200	4,185,490	-8.52%	-7.30%
16	4,359,125	4,635,021	4,588,563	4,253,354	-7.31%	-7.30%
17	4,383,173	4,558,284	4,641,356	4,318,979	-6.95%	-7.28%
18	4,461,240	4,567,165	4,367,121	4,241,922	-2.87%	-7.04%
19	4,629,474	4,713,397	4,639,428	4,423,148	-4.66%	-6.92%
20	4,646,654	4,793,063	4,656,344	4,572,427	-1.80%	-6.65%
21	4,847,050	5,089,588	4,724,999	4,634,546	-1.91%	-6.42%
22	4,731,606	4,971,150	4,820,232	4,657,808	-3.37%	-6.28%
23	4,736,808	5,034,161	4,858,965	4,749,876	-2.25%	-6.09%
24	4,678,030	4,963,031	4,879,310	4,843,465	-0.73%	-5.86%
25	4,765,097	4,963,685	4,830,668	4,627,817	-4.20%	-5.79%
26	4,889,579	5,053,126	4,861,725	0		
27	4,783,938	5,093,253	4,895,318	0		
28	4,798,406	5,046,820	4,997,057	0		
29	4,769,160	4,938,439	5,017,263	0		
30	4,697,472	4,949,171	4,945,091	0		
31	4,823,873	4,930,530	4,899,782	0		
32	4,599,652	4,914,003	4,777,586	0		
33	4,664,320	4,927,524	4,833,105	0		
34	4,630,834	4,820,829	4,789,323	0		
35	4,574,626	4,803,178	4,732,835	0		
36	4,556,357	4,726,410	4,730,349	0		
37	4,546,038	4,749,120	4,714,649	0		
38	4,577,906	4,726,096	4,767,178	0		
39	4,465,518	4,727,647	4,643,255	0		
40	4,582,221	4,746,754	4,699,828	0		
41	4,590,909	4,742,893	4,688,550	0		
42	4,572,978	4,740,795	4,683,724	0		
43	4,571,293	4,748,910	4,650,216	0		
44	4,531,890	4,720,888	4,567,236	0		
45	4,592,295	4,689,948	4,554,604	0		
46	4,612,333	4,788,297	4,474,346	0		
47	4,595,144	4,749,967	4,474,446	0		
48	4,626,608	4,734,815	4,483,251	0		
49	4,631,459	4,680,756	4,406,989	0		
50	4,553,798	4,671,558	4,316,657	0		
51	4,297,822	4,435,685	4,083,679	0		
52	3,879,499	4,066,875	3,665,338	0		

Week: 25 Calendar Year System Energy (MWh) Including IOS



Source: SQ&P - STL

2009/10 Financial Year-to-date Growth = -3.5%

Projected Growth for 2009 Calendar Year (forecast influence for the remainder of the year) = -5.0%

1. Year on Previous Year Energy Growth:

Last Week: 25
Week on Week growth: -4.452%
Year on Year growth for last week: -4.199%

2. Peak/Energy Interrupted

Week:25 (MWh) 3875
Week:25 Peak Hour (MW) 0

3. 2009 YY Energy growth (%):

	NSO Energy (TWh)	NSO+IOS Energy (TWh)
2009	-1.97%	-2.38%
2008	236,130	236,221
2007	240,864	241,979
2006	246,210	246,907
2005	236,045	236,341
2004	225,662	225,662
2003	224,768	224,768
2002	213,722	213,722
	203,797	203,797

4. 2009 Y-end Projection: Based on YTD & OPS Fc

- Calendar Year	236,130
- Financial Year (2008-9)	236,143

236,221
236,669

Instructed IOS Include:

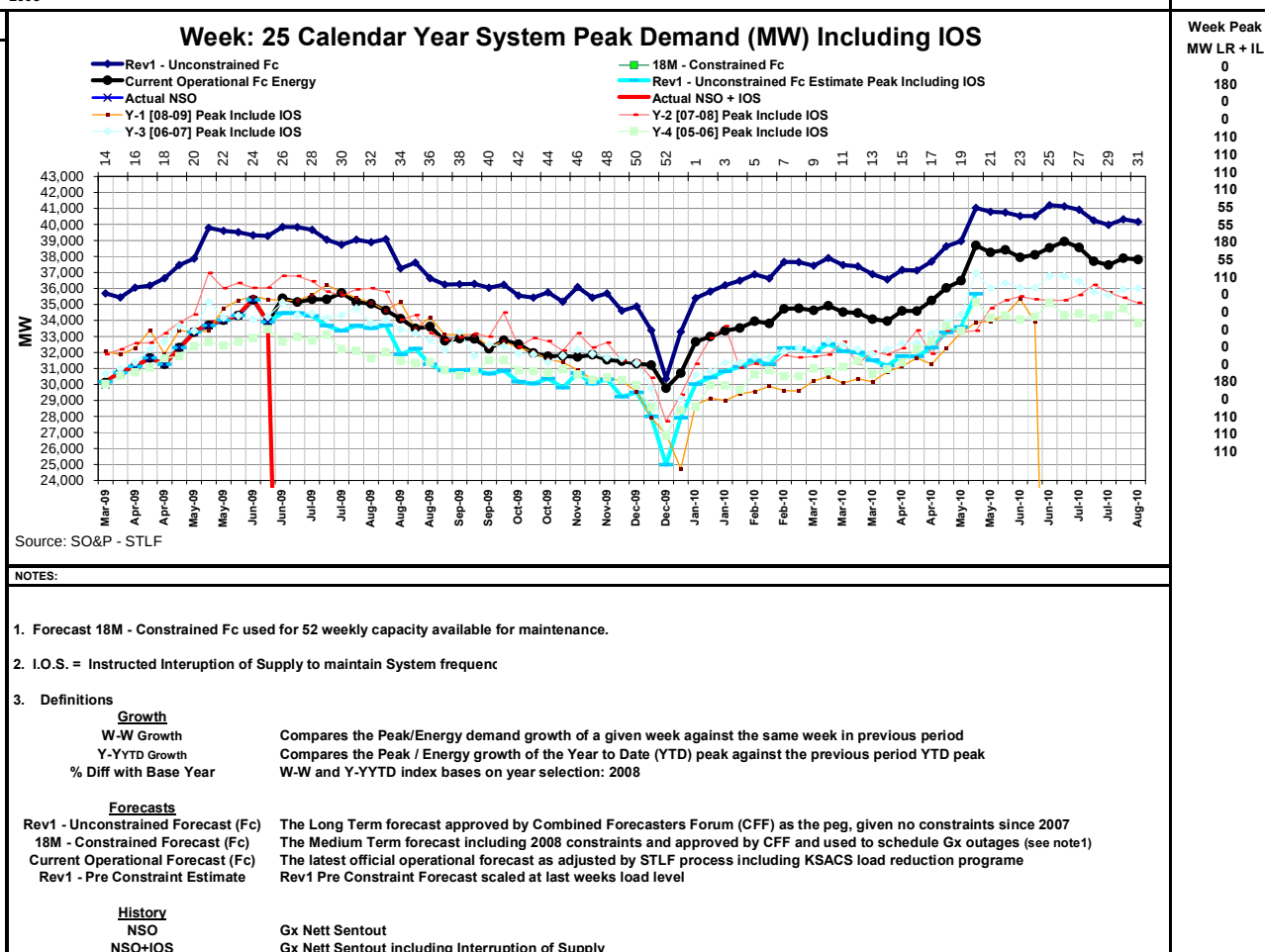
- 1.) Agreements
- 2.) Demand Market Participation (DMP)
- 3.) Virtual Power Station (VPS)
- 4.) Load shedding
 - Mandatory
 - Voluntary
- 5.) Events
 - Network
 - Sapp
 - Fires
 - Weather

5. 2009 Y-end Projection: Estimate Rev1 at current load level
Peak Demand = 35658 MW

Actual Demand (Capacity)

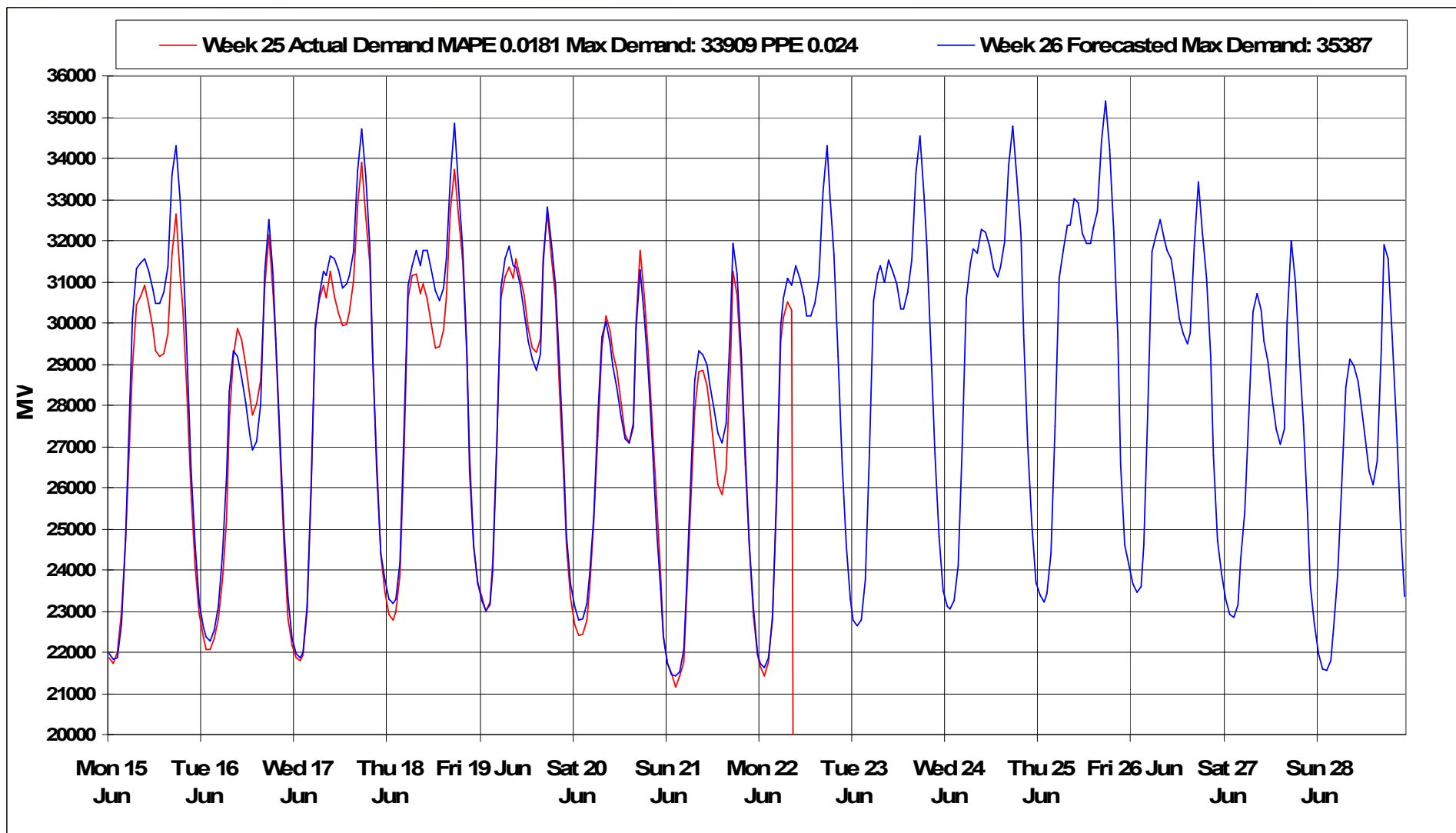
Week: 25 Calendar Year System Peak Demand (MW) I % Diff with Base Year: 2008

Week	2006	2007	2008	2009	W-W	Y-YYTD
1	28389	29104	29358	24720	-15.80%	-15.80%
2	28603	30609	31281	28737	-8.13%	-8.13%
3	29958	30812	32889	29145	-11.38%	-11.38%
4	29938	31360	33644	28998	-13.81%	-13.37%
5	29673	31370	31041	29402	-5.28%	-12.61%
6	30624	31717	31294	29566	-5.52%	-12.12%
7	30892	31684	31080	29881	-3.86%	-11.18%
8	30525	32075	31824	29618	-6.93%	-11.18%
9	30523	32281	31687	29595	-6.60%	-11.18%
10	31012	32247	31747	30224	-4.80%	-10.16%
11	30816	32718	31862	30495	-4.29%	-9.36%
12	31105	32438	32653	30089	-7.85%	-9.36%
13	31472	32211	31285	30356	-2.97%	-9.36%
14	30663	31890	32052	30171	-5.87%	-9.36%
15	30969	32187	31866	30792	-3.37%	-8.48%
16	31380	32583	32260	31124	-3.52%	-7.49%
17	32228	32607	33381	31658	-5.16%	-5.90%
18	32703	33196	31917	31269	-2.03%	-5.90%
19	33653	33880	33371	32268	-3.31%	-4.09%
20	33354	34369	33269	33243	-0.08%	-1.19%
21	35165	36970	33361	33868	1.52%	0.67%
22	34180	36016	34762	33949	-2.34%	-2.34%
23	34304	36342	35257	34361	-2.54%	-2.54%
24	34058	36030	35500	35339	-0.45%	-0.45%
25	34241	36045	35321	33909	-4.00%	-0.45%
26	35115	36789	35257	0		
27	34336	36775	35253	0		
28	34443	36442	35585	0		
29	34147	35799	36227	0		
30	34321	35575	35759	0		
31	34760	35936	35421	0		
32	33849	36009	35100	0		
33	34029	35784	34644	0		
34	33448	34047	35144	0		
35	33213	34337	33484	0		
36	32778	33210	34182	0		
37	32133	32787	33111	0		
38	33298	32947	33133	0		
39	31771	33177	33084	0		
40	32497	32982	32350	0		
41	32377	34494	32675	0		
42	31907	32359	32301	0		
43	31885	32897	32035	0		
44	31391	32710	31577	0		
45	31804	32117	31396	0		
46	32184	33212	30906	0		
47	31915	32302	30328	0		
48	31677	32614	30437	0		
49	31644	31489	30215	0		
50	31346	31468	29556	0		
51	29759	30419	27909	0		
52	26735	27693	26898	0		

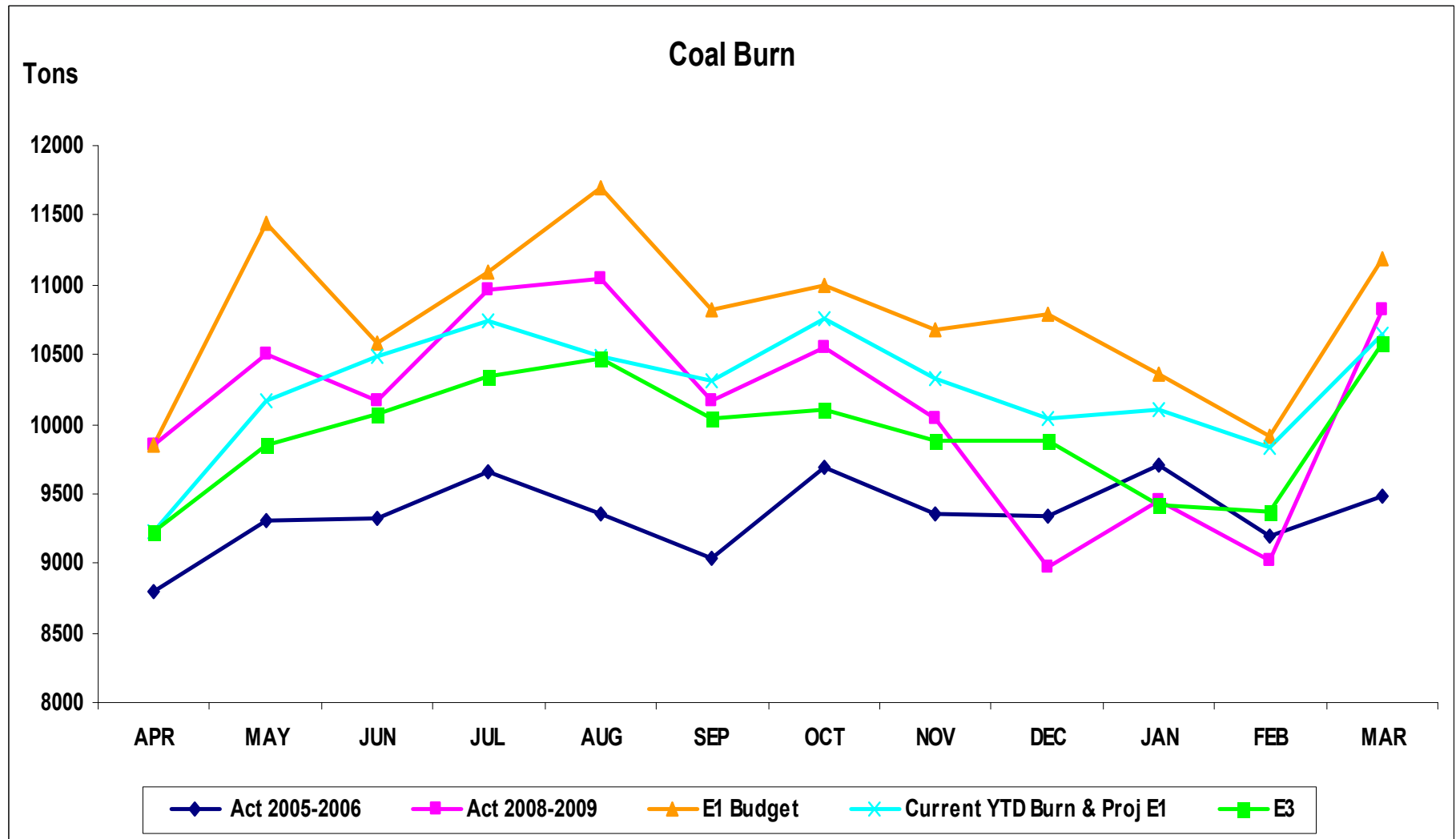


Week	Peak
1	180
2	0
3	180
4	0
5	110
6	110
7	110
8	110
9	110
10	110
11	110
12	110
13	110
14	110
15	110
16	110
17	110
18	110
19	110
20	110
21	110
22	110
23	110
24	110
25	110
26	110
27	110
28	110
29	110
30	110
31	110

Demand (Actual and Forecast)

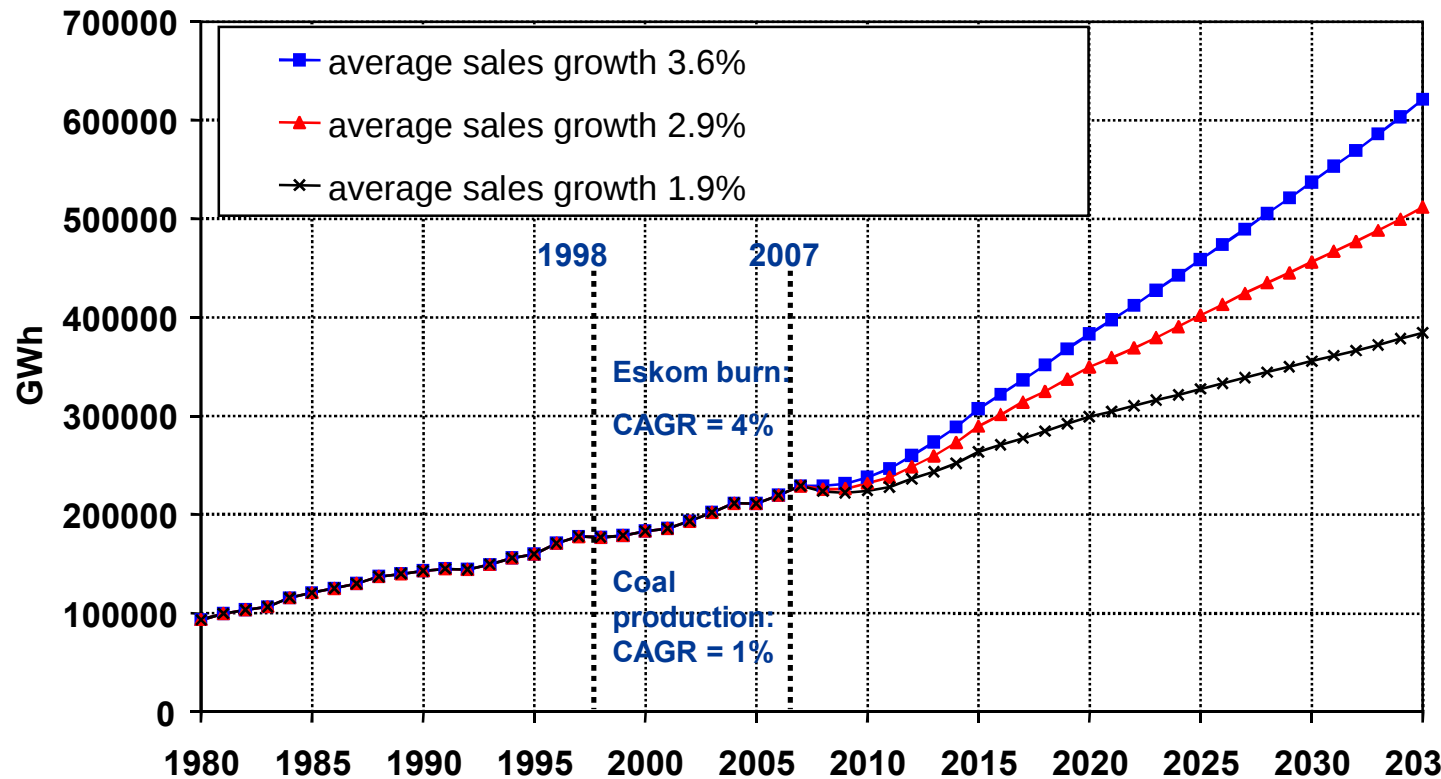


Coal Burn Comparison



SALES FORECAST FOR GROWTH SCENARIOS

Electricity sales forecasts



Notes

- Forecast for 2009 GDP growth revised by Bureau of Economic Research to 1.9%.
- Medium term GDP growth trend from various economists is between 3 and 4%.
- Conditions for growth: export friendly exchange rates, economic recovery in OECD countries, bottoming out of commodity prices, moderate inflation rates and lower interest rate outlook. Coupled with appropriate economic policy

THE LONG TERM COAL SUPPLY STRATEGY WILL ONLY REQUIRE REVISION IF ELECTRICITY DEMAND GROWTH DROPS BELOW 2% p.a

Demand sensitivity assumptions

Ç Demand scenarios assumed:

ñ 4% growth

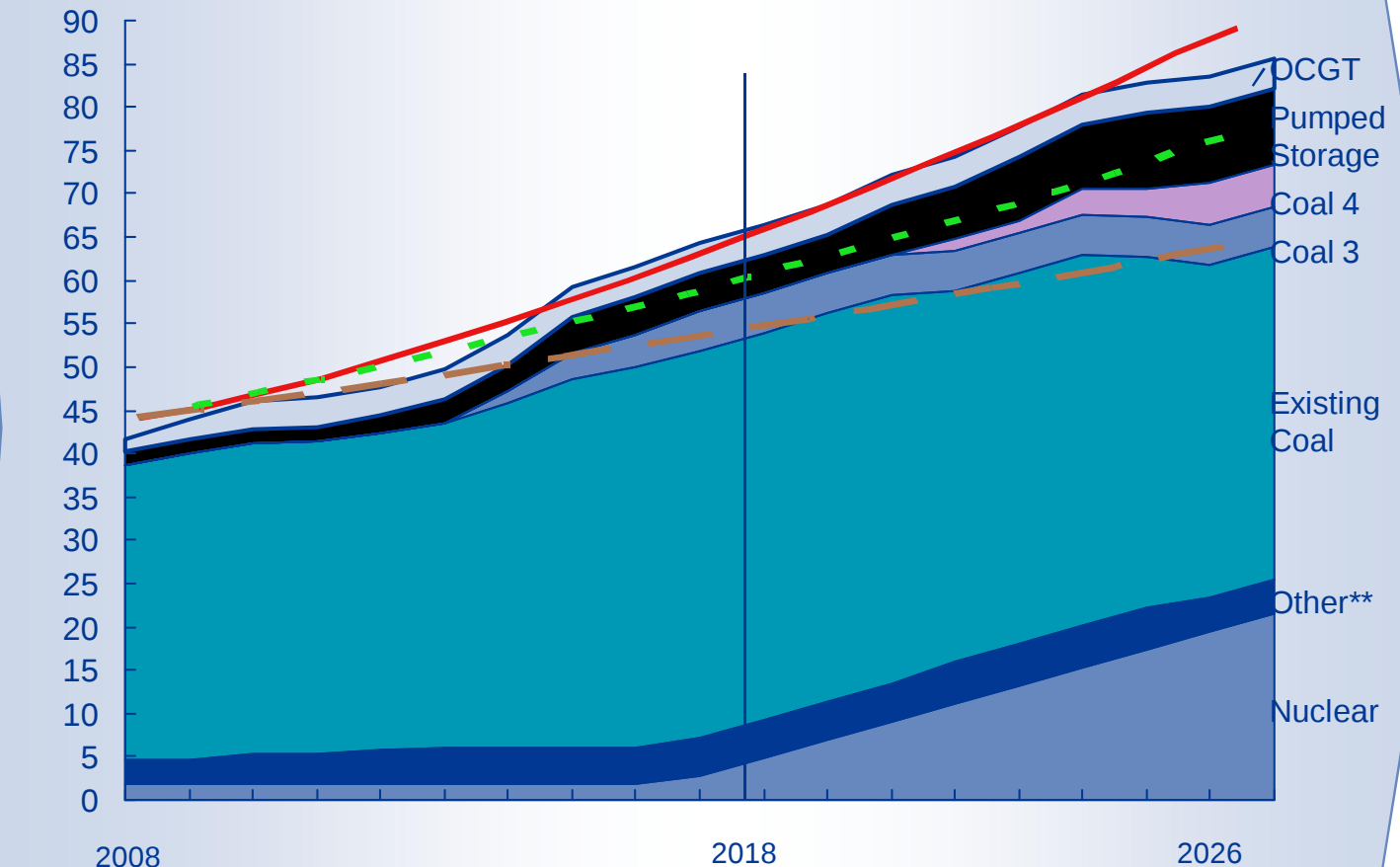
ñ 3% growth with 15% reserve margin

ñ 2% growth with 15% reserve margin

Ç Nuclear expansion is still part of the plan, but could be replaced by coal

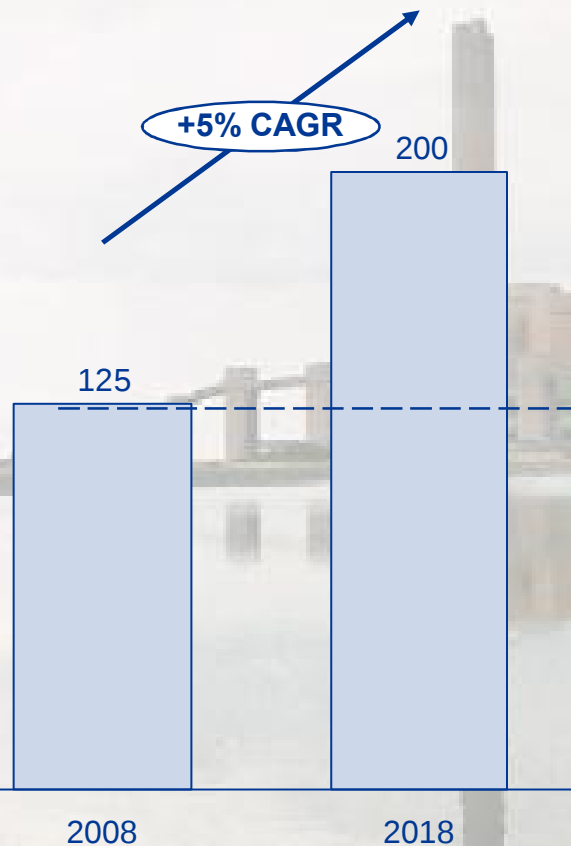
Ç OCGT output will be reduced and coal 3&4 delayed before supply from coal is ramped down

SA expected energy supply and demand till 2026 GW



ESKOM COAL CONSUMPTION 2008 vs 2018

Eskom's coal consumption, Mtpa



Drivers of additional 75Mtpa consumption

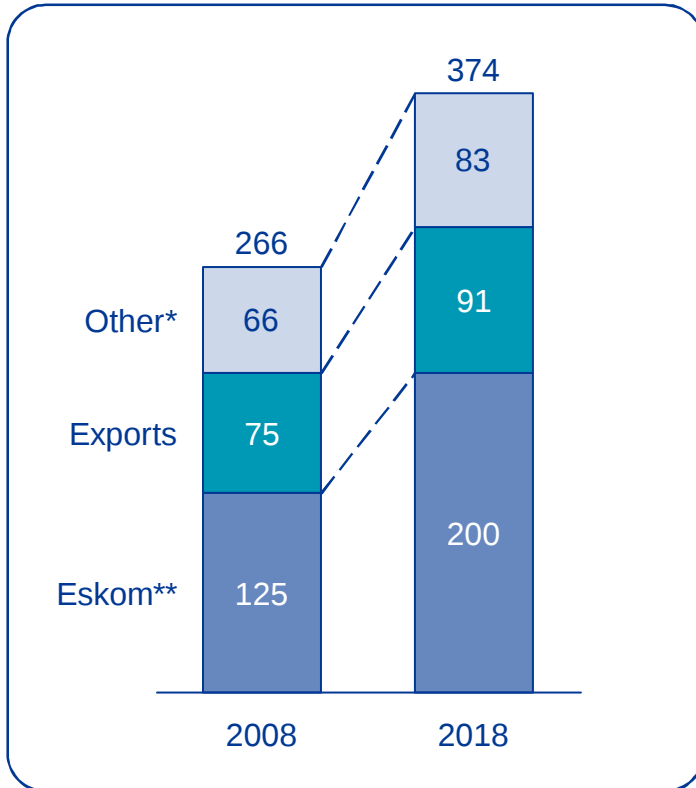
ÇReturn to service of Camden, Grootvlei & Komati

ÇIncreased load factor of current stations

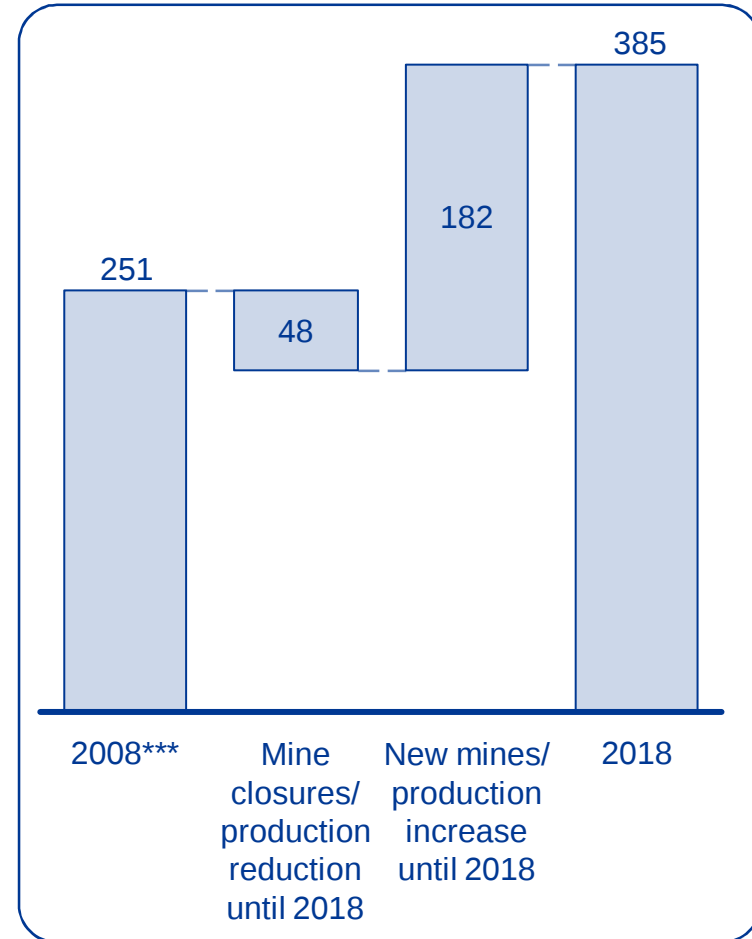
ÇDemand from 4 new stations: Medupi, Kusile, Coal 3 & Coal 4

SA THERMAL COAL CONSUMPTION vs PRODUCTION, 2008 & 2018

Thermal coal consumption, Mtpa



Thermal coal production, Mtpa

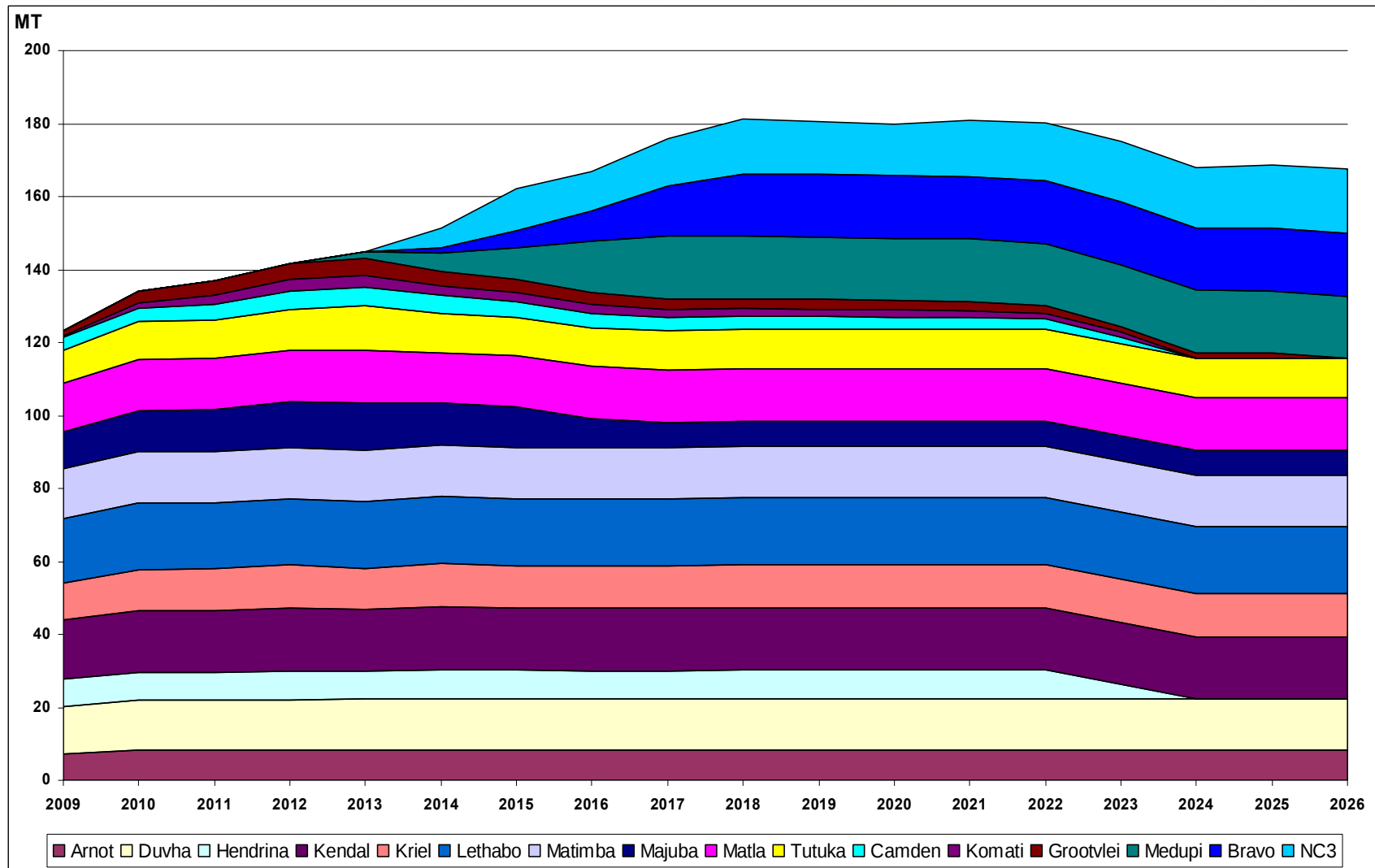


* Includes consumption by Sasol and other consumers

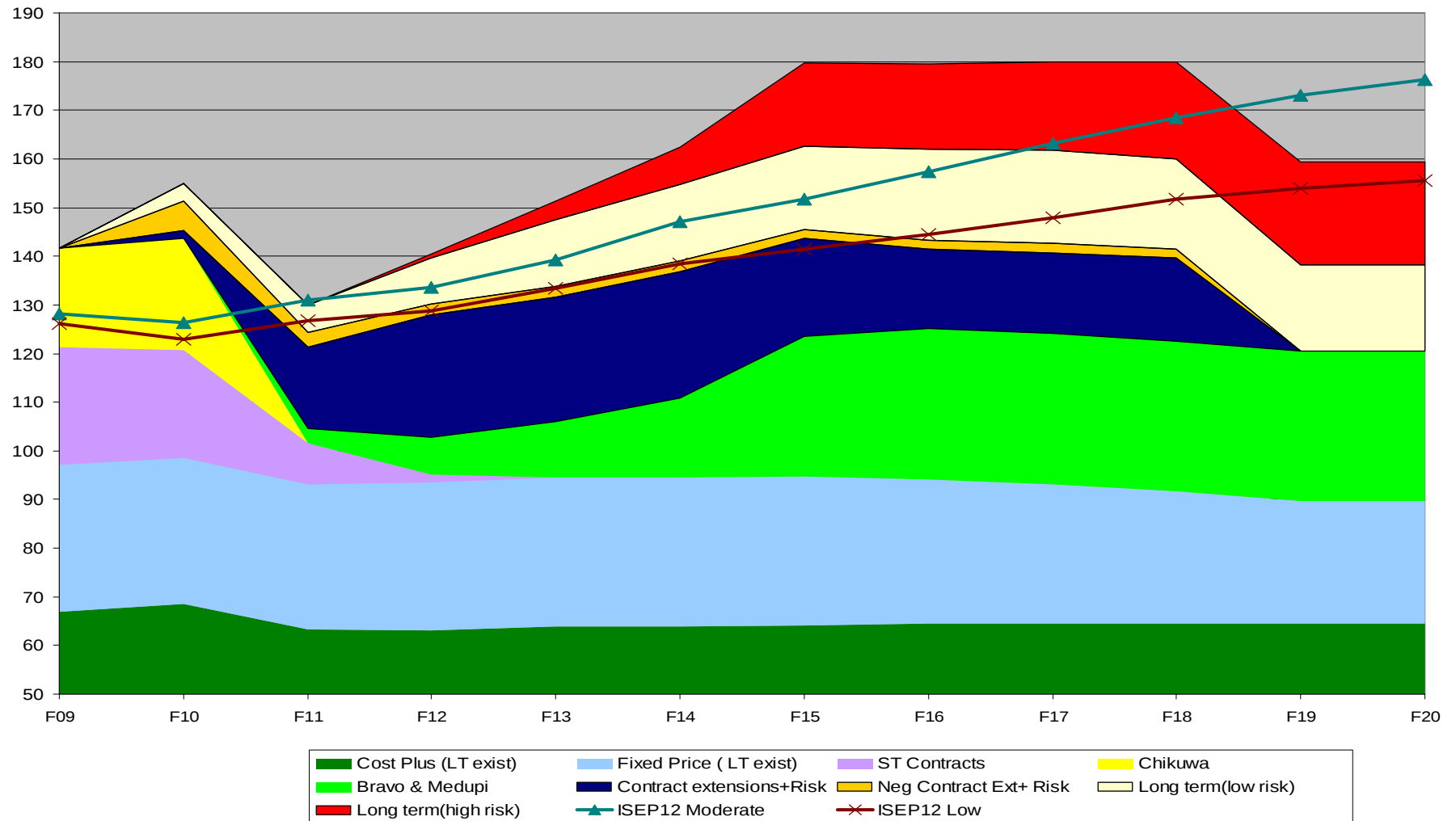
** Reflects FY2008 burn and projected demand for FY 2018

*** Difference between 2008 production and consumption is covered by use of dumps

PROJECTED BURN 2009 TO 2026



MEDIUM & LONG TERM COAL SUPPLY



Eskom Power Stations

Legend

- ▲ Coal-Fired (Base Load)
- ▲ Coal-Fired (RTS)
- ▲ Nuclear
- Hydroelectric
- ▲ Pumped Storage
- Open Cycle Gas Turbine
- National Grid
- Windfarm



Base Load

1	Arnot	2100 MW
2	Dunha	3600 MW
3	Handrina	2000 MW
4	Kendal	4116 MW
5	Koeberg	1930 MW
6	Kriel	3000 MW
7	Lethabo	3708 MW
8	Majuba	3990 MW
9	Matimba	3990 MW
10	Meda	3400 MW
11	Titika	3654 MW

Return To Service

12	Canden	1600 MW
13	Grootevlei	1200 MW
14	Komati	1000 MW

The Return To Service (RTS) stations were mothballed in 1990 and are in the process of being recommissioned to meet the growing demand of electricity.

Peaking Generation

Hydroelectric:		
15	Gariep	360 MW
16	Vanderloof	240 MW
Pumped Storage:		
17	Drakensberg	1000 MW
18	Palmiet	400 MW
Open Cycle Gas Turbine:		
19	Acacia	171 MW
20	Port Rex	171 MW
21	Ankerl	600 MW
22	Gourikwa	450 MW
Windfarm:		
23	Klippanvel	3.2 MW

The peak load stations can generate electricity within three minutes of start-up, making them ideally suited to supply power during peak periods. They also assist in regulating the system voltage and frequency to ensure stability of the national transmission network.

New Build

Base Load		
24	Medupi	4788 MW
Pumped Storage		
25	Inga	1352 MW

Distribution

26	First Falls	6.4 M
27	Second Falls	11 M
28	Mbeke (Gallywebbles)	42 M
29	Ncora	2.4 M



CONTENTS

Ç RECOVERY PLAN

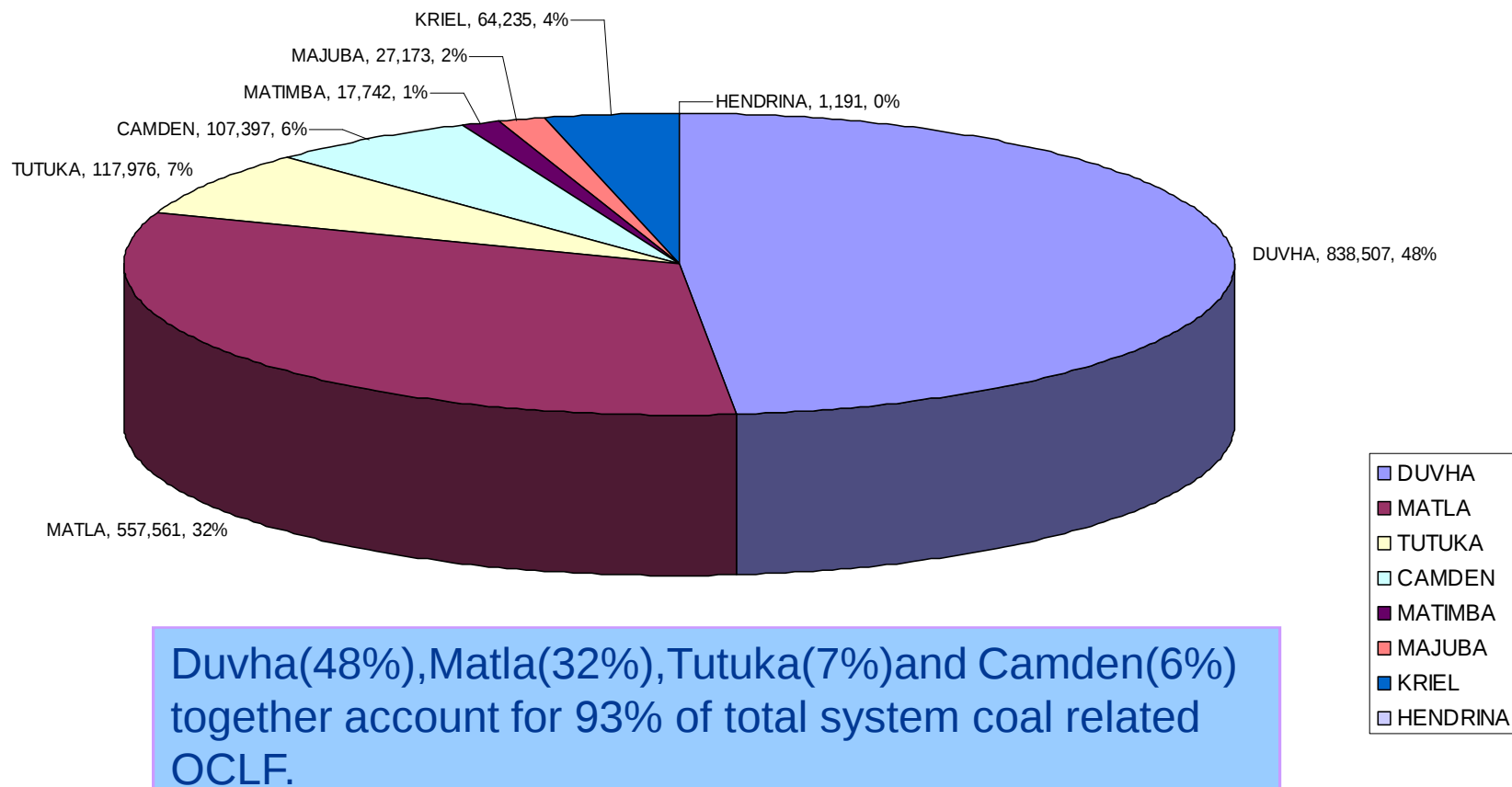
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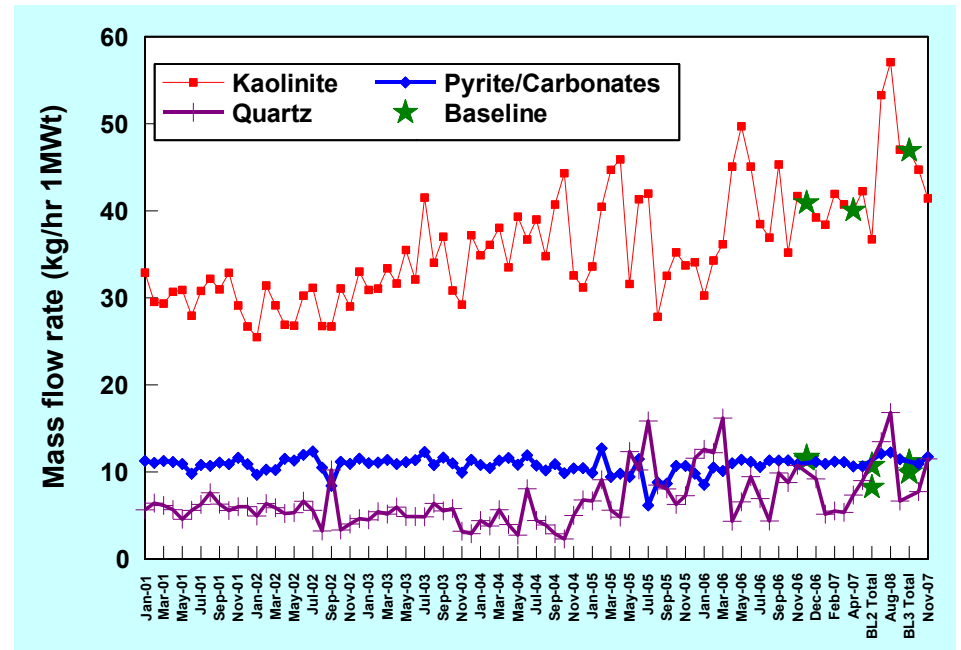
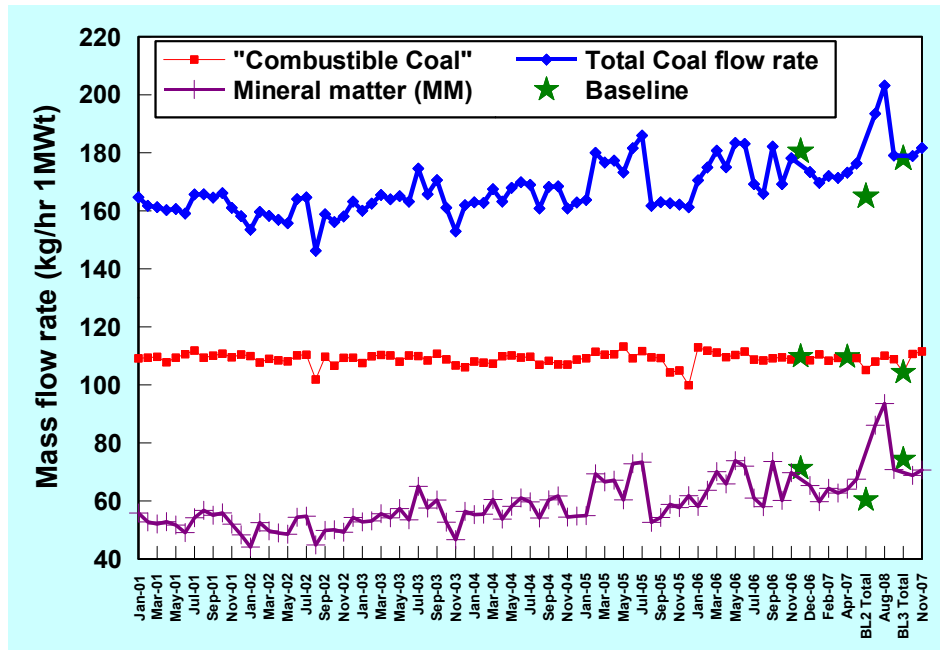
Ç ENVIRONMENTAL

Ç COST REDUCTION

COAL RELATED OCLF-MWh(Apr08-Jan09)



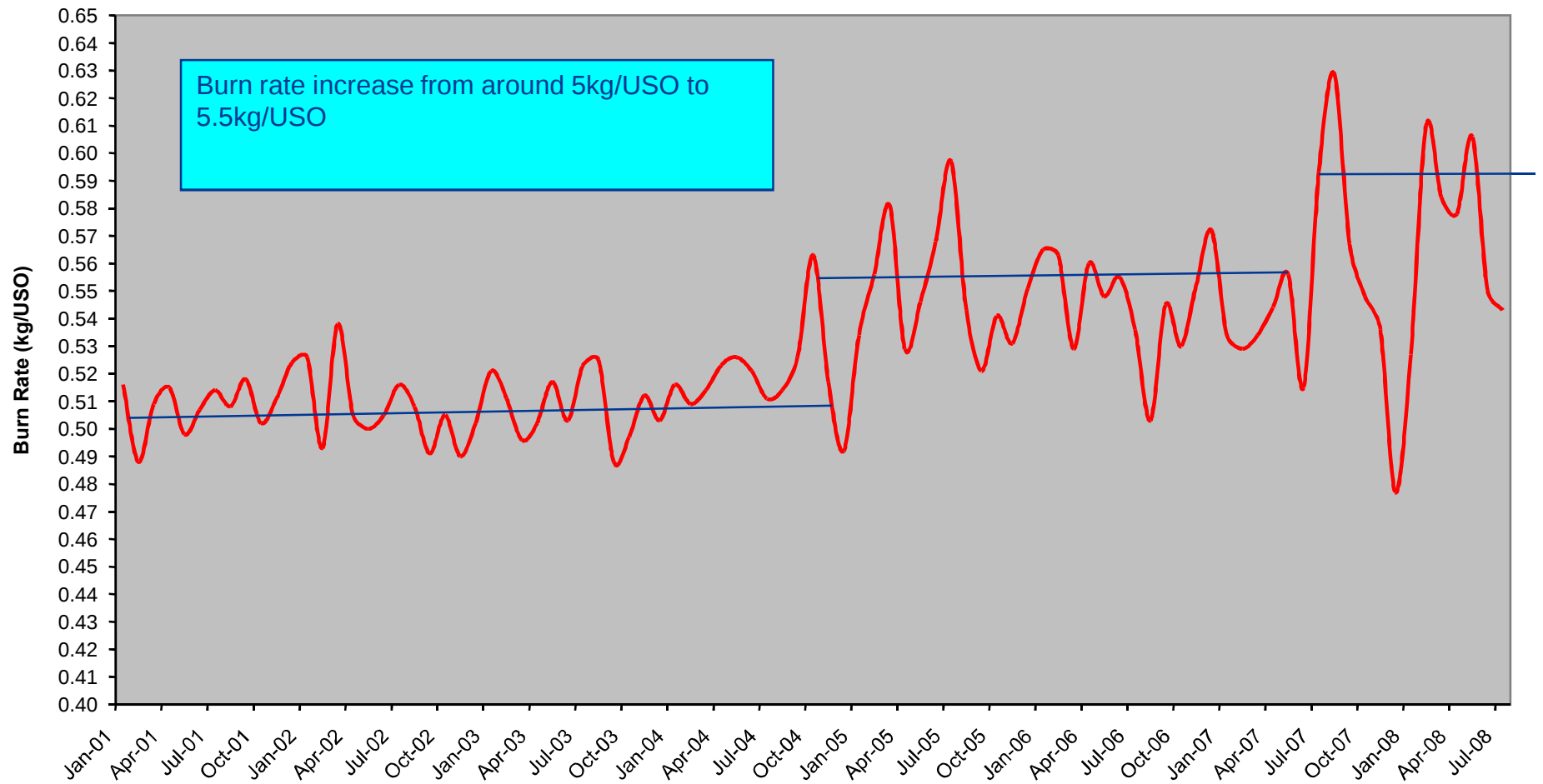
COAL STRATEGY: STONE CONTAMINATION INITIATIVE



➤ Poorer Coal Quality is attributed to stone contamination .

BURN RATE FROM JAN'01 TO JUL'08

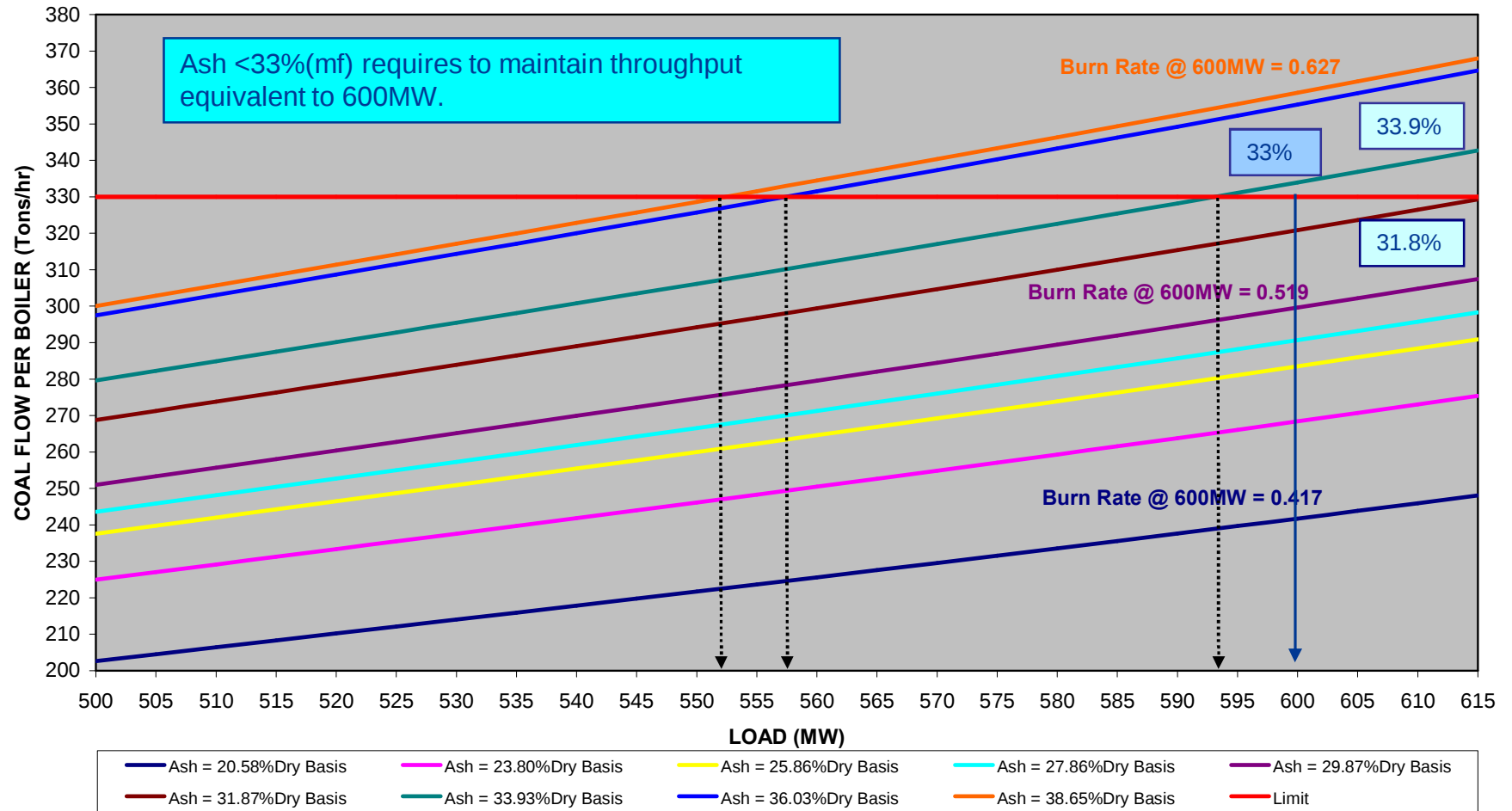
INCREASE IN BURN RATE FROM JAN'01 TO JUL'08



CQEM RESULTS – ASH IMPACT(mfb)

COAL FEED/MILL = 66 T/HR

MAXIMUM COAL REQUIRED FOR VARYING LOADS & COAL QUALITIES - MILL THROUGHPUT IS
 $66 \times 5 = 330 \text{ T/hr PER BOILER}$



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Generation Particulate Emissions

Compliance to CAPCO Licence Limits

22 June 2009

22 June 2009												
	Tonnage Limit		Emissions Limit				CAP Limit		Exemptions (E) & Contraventions (LC)			
	Monthly Limit (tons)	31-day tonnage	Limit (mg/Sm³)*	Weekly average (mg/Sm³)	Max hourly average (mg/Sm³)	Hours exceeded	Limit (mg/Sm³)	Hours exceeded	08/09 YTD		09/10 YTD	
									E	LC	E	LC
Arnot	318	220	50	34	52	1	100	0	2	0	1	0
Duvha U 1-3	569	90	50	21	33	0	100	0	35	2	4	0
Duvha U 4-6		226	75	50	171	108	300	0				0
Hendrina	500	185	50	29	48	48	100	0	4	0	1	0
Kendal	450	271	75	33	125	82	150	0	56	13	6	0
Kriel U 1-3	1400	697	275	242	357	74	450	0	24	1	4	1
Kriel U 4-6		206	225	100	307	8	450	0				
Lethabo	663	387	75	57	200	408	300	0	20	0	3	0
Majuba	119-597	223	50	20	73	28	100	0	14	1	2	0
Matimba	1000	565	200	58		4	300	0	0	0	0	0
Matla	1000	365	175	59	338	15	450/750	0	16	1	2	0
Tutuka	1200	1295	250	205	523	446	300	105	6	1	2	0
Camden Stk 1,2,4	435		Reporting to resume once dust monitor has been re-calibrated				100		-	-	0	0
Camden Stk 3							300		-	-	0	0
Grootvlei			100	To commence In 2009			300		6		0	0
								TOTAL	183	19	23	1

Exemption requests 2009FY

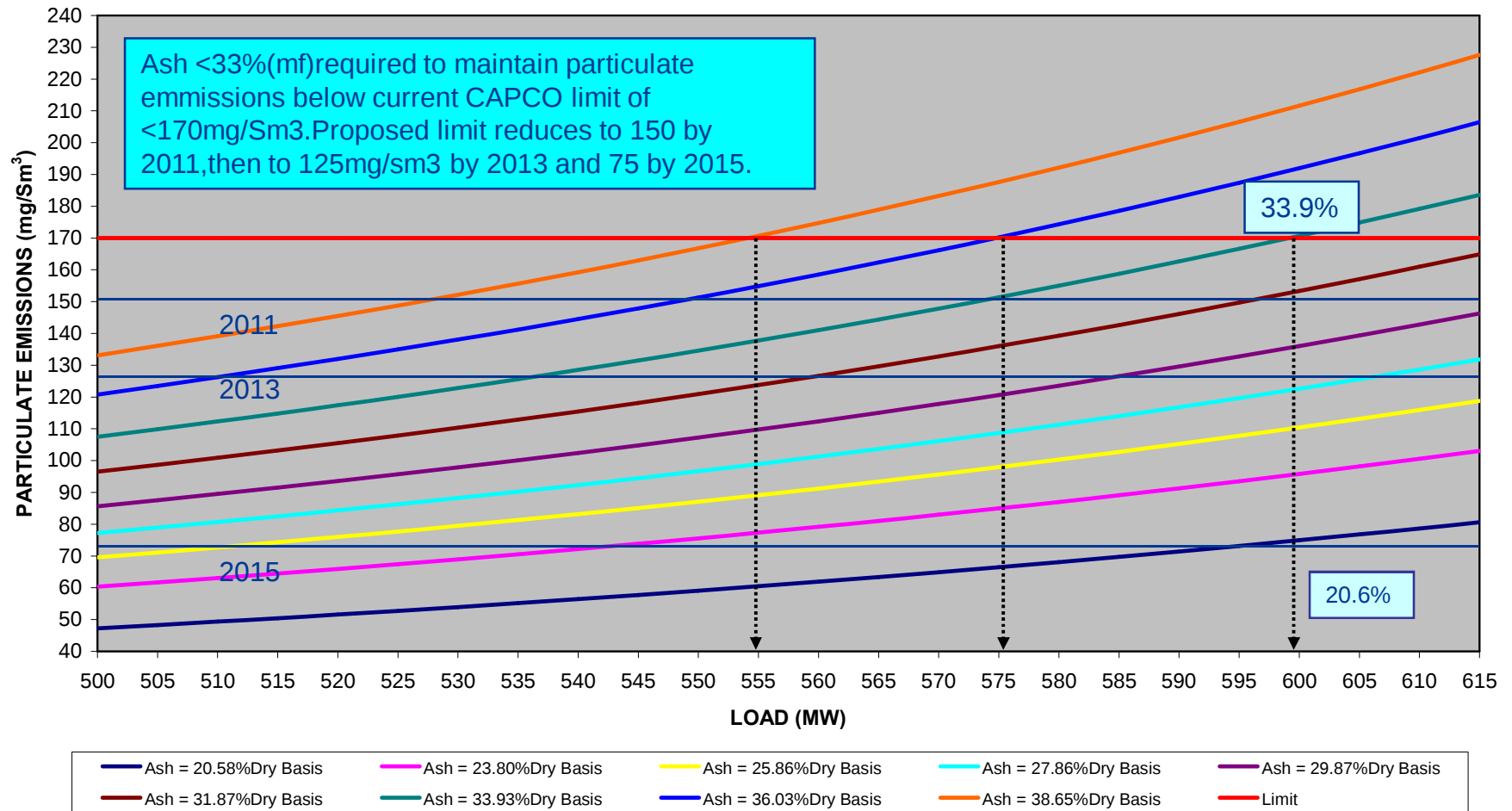
Station	Units	April	May	June	July	August	September	October	November	December	January	Total days	% of total
Duvha	1											0	0
	2							18	29			47	15
	3											0	0
	4	23		30	25	22	23	16	20	31	29	219	72
	5				26	18	3	19	28	30		124	41
	6		15				16	28	29	30	19	137	45
Kendal	1	20						31	30	29	11	121	40
	2									8	11	19	6
	3	6			31					29		66	22
	4				23	17	9	31	30	29	11	150	49
	5					17	22	16	24	17	15	111	36
	6											0	0
Lethabo	1			29	30	31	30	31	30	31	31	243	79
	2			29	30	31					20	110	36
	3			29	30	17		23	30	31	31	191	62
	4	26	4	29	30	17		23	30	31	31	221	72
	5			29	30	17						76	25
	6			29	30	17	13	23	30	31	31	204	67

Please refer to excel file for all power stations.

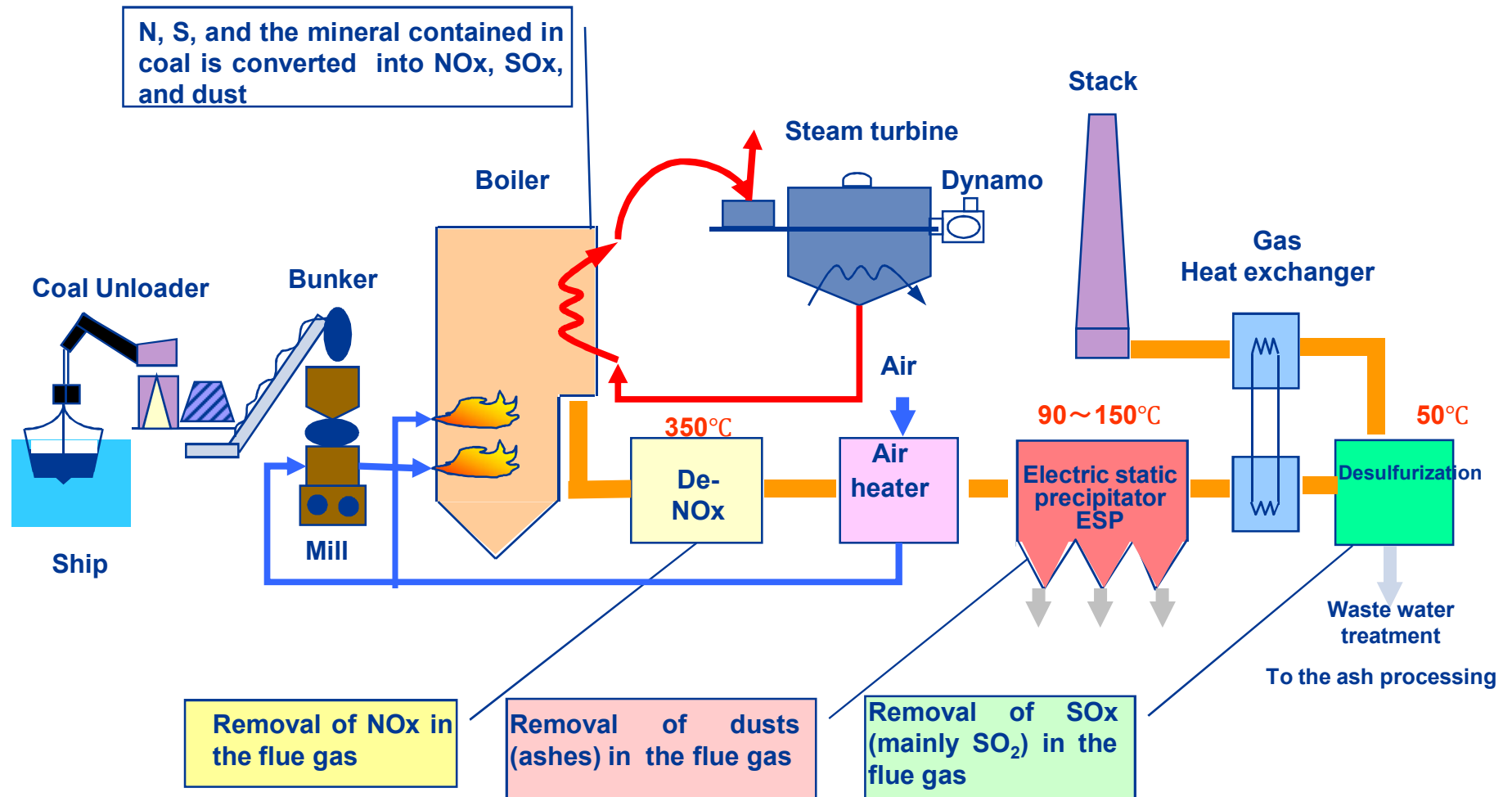
CQEM RESULTS – PARTICULATE EMISSION

CAPCO Limit <170 mg/Sm³

PARTICULATE EMISSIONS WITH VARYING COAL QUALITIES - CAPCO LIMIT <170 mg/Sm³



SCHEMATIC LAYOUT OF A PULVERISED FUEL POWER STATION WITH FLUE GAS TREATMENT SYSTEM



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Ç RECOVERY PLAN

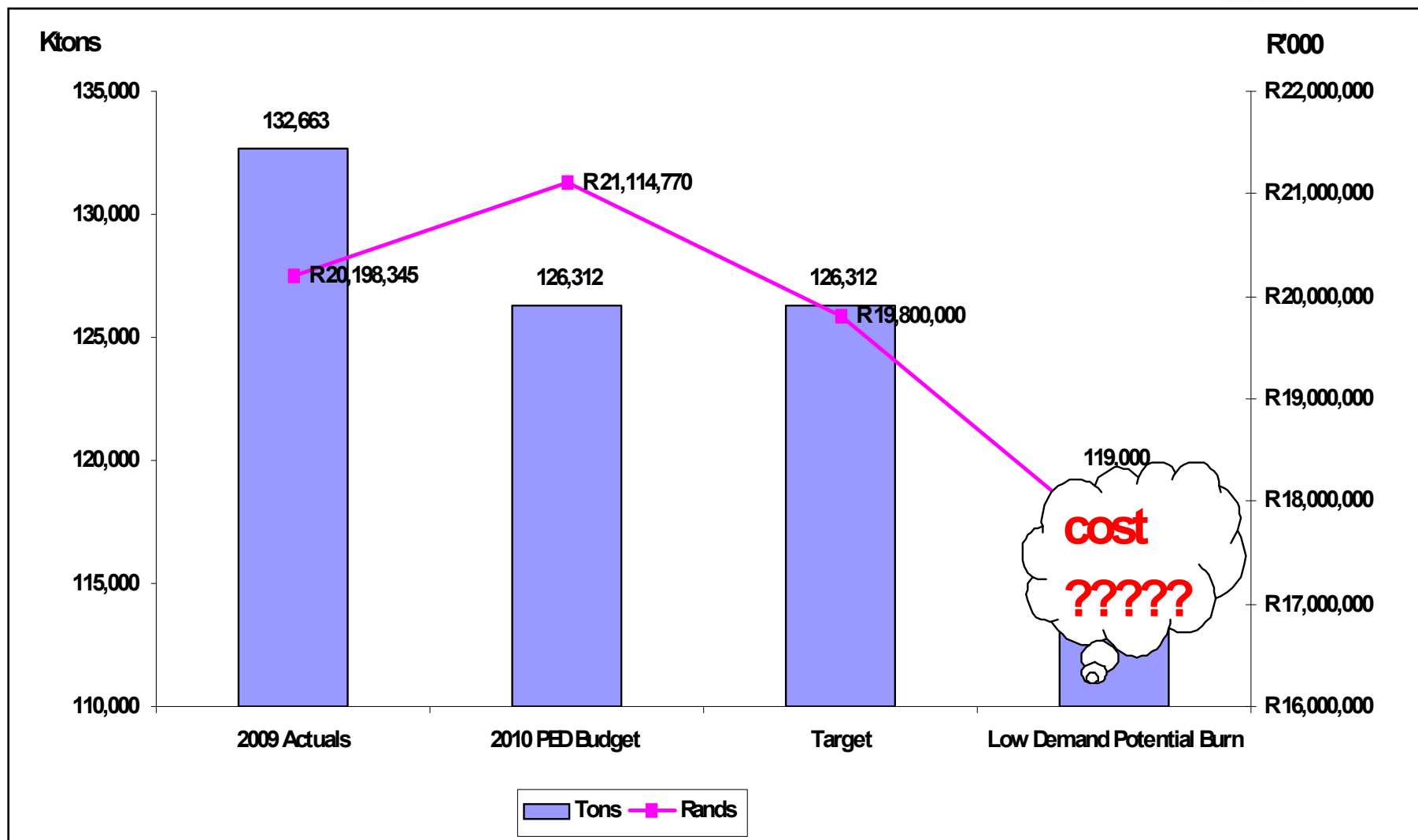
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Ç COAL QUALITIES/ LOAD LOSSES

Ç ENVIRONMENTAL

Ç COST REDUCTION

Cost Reduction





Thank you