

**Ensuring sufficient capacity
to power the 2010 World Cup**

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SA powers Africa's dream

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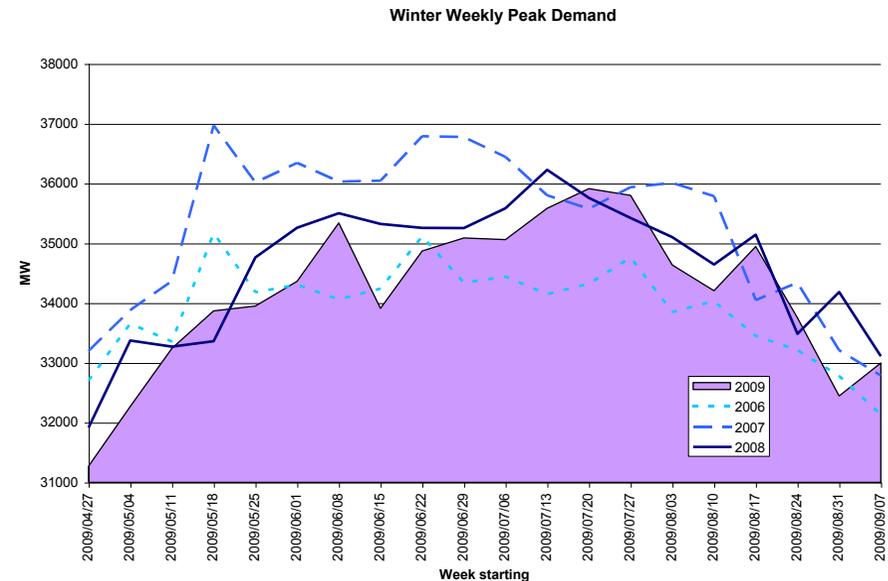
Eskom – System Operator

Background

- The 2010 FIFA World Cup South Africa™ (2010 FWC) provides an opportunity for South Africa to prove to the world that we can successfully host an event to make the world envious.
- Although the electricity industry may not be official sponsors, our contribution is beyond essential to ensure a successful event for the international arena, and all South Africans.
- The event occurs in the middle of South Africa's winter, and traditionally system peak loading, amidst vast uncertainty around world economies and knock-on demand requirements.
- The context of this presentation is the critical 6 – 8 week period of the event, a relatively short period during which extraordinary measures can be taken.
 - The medium to long term energy challenges and requirements of the country, including the financial and environmental constraints, will not be addressed.

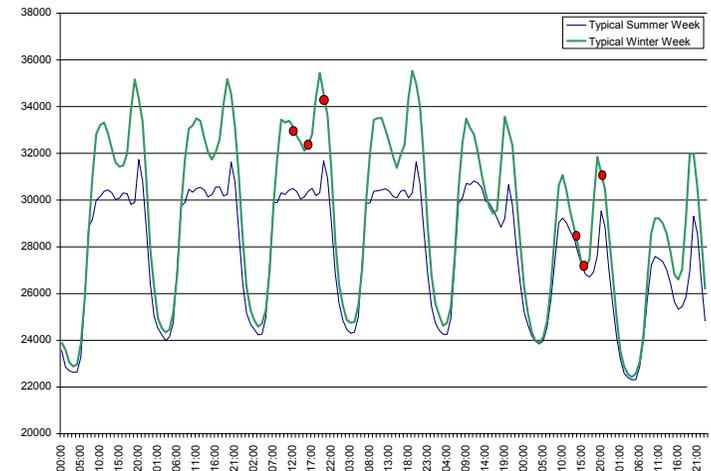
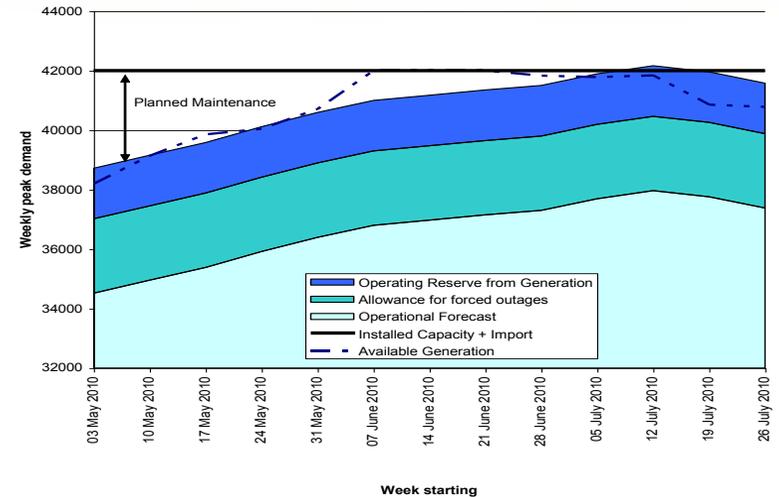
Current demand trend

- The peak demand on the Eskom system for 2009, was just less than 36 000 MW.
 - approximately 300 MW lower than that of 2008
 - exceeds that of 2006
 - approximately 1000 MW lower than the absolute peak of 2007.
- The current energy requirements is trending about 4% lower than the same time last year, but this reduction is reducing on a weekly basis.
- Industrial Customer load reduction due to economic recession.
 - A substantial reduction in demand was seen in a number of sectors but production is already building up.
 - From a maximum of about 2000 MW load reduction, this has now reduced to only 1000 MW. There is still some uncertainty as to how this will continue to pan out in the months ahead.



Indicative supply/demand balance

- The peak demand expected for 2010, is just short of 38 000 MW.
 - This is obviously dependant on many factors.
- The current installed capacity, including all “emergency generation” is adequate to cover the current expected demand and normal reserve requirements.
 - The forced outage rate over winter is typically within the target range of 2500 MW.
 - The new generating plant to be installed has not been included here.
- The expectation is that there will be a limited increase in demand, due to the event.
 - The expected increase has been factored into the forecast.
 - The match times are expected to influence the load profile, but are all just “off peak”.



Eskom Generation Planning

- Philosophy
 - No long duration outages will be scheduled over the FWC period, and short duration outages will only be accommodated if adequate capacity exists. This includes no planned outages at Koeberg.
 - Emergency generation will be adequately resourced to ensure availability when required.
 - Integrated Generation Control Centre has been established for continuous monitoring and coordination of mission critical data.
- Primary Energy
 - Strong focus on the management of water, liquid fuel and coal supply stockpiles
 - Current coal stock pile days are at an average of about 45 days across the power system.
 - This is expected to remain at least above 40 over the course of the next year.
- Progress on new build
 - There is a potential additional 500 – 600 MW of generation which may be in commercial operation by the event next year. This is not included in our current analysis.

Customer interactions to date

- Southern African Power Pool (SAPP).
 - A pledge has been signed by all SAPP member utilities, to assist in maximising the amount of power in the region during this event.
 - Additional power, in the form of standby generation or potential surplus power is being made available to South Africa.
- Large industrial customers participation
 - Approximately 420 MW of load has potentially been offered for load reduction during the critical time period. Written confirmation of this potential will allow it to be included in the planning.
 - Typically maintenance has been shifted into this time period.
 - The larger contributors of Cogen have also confirmed that their generation will be online.
- Other DSM initiatives are being actively pursued.

Flexibility required to respond to uncertainty

- While the overall picture looks acceptable in terms of ability to supply, operationally we know “anything can happen”.
 - The greater the amount of upfront interaction and planning, the less likely anything will occur.
- An extended supply/demand mismatch will require base load reduction to ease the overall burden.
 - This may occur due to substantially higher than expected demand or unusually high forced outage rates.
- Short term capacity constraints may occur due to a number of generators being unavailable within short period of time
 - Flexibility is required from customers to reduce load on ad-hoc basis
- Immediate power shortage due to simultaneous loss of a number of generators
 - Change in schedules for Customer Voluntary Automatic UFLS for high priority loads.
 - Power system integrity will not be compromised.
- Load reduction may also be needed to deal with potential network failures.

Opportunity for participation

- There is an opportunity for each small player to make their contribution to powering the 2010 FWC.
- This contribution may come from both the supply side and demand side.
 - Sell the idea of the “power we save” being used to power the event.
- Maximise all available generation across the country
 - 2009 saw substantially reduced generation from many redistributors, which contributed to higher energy sales from Eskom
 - Engage on removing technical constraints prior to the event.
- Load reduction
 - Encourage customers to do plant maintenance during this time period.
 - Identify load that can be reduced without significant impact on the event.
 - Companies can promote their contribution to this load reduction.

Collaboration to ensure success

- Through the 2010 Regional Task Teams a number of these issues are going to be addressed.
- While we hope that these initiatives will never be required, we can not afford to not have done the preparation.
- Interaction will occur on:
 - Alignment of load shedding schedules
 - UFLS changes
 - Communication during incidents
 - Use of ripple control and other load management techniques and the coordination of these opportunities
- Eskom will establish Situational Awareness Centers for the duration of the event, both nationally and regionally, and these will form the hub of the situational communication (not in any way interfering with the responsibilities of the various control centers).

Information requirements

- The key to success is the ability to accurately plan and detailed information is required for this.
- All the above numbers refer to “Eskom generation” but this is strongly influenced by other “country” generation as well as customer behaviour.
 - Actual MW load reduction, and time/duration of this reduction will improve the forecast accuracy.
 - What is the current available non-Eskom generation and what constraints need to be removed to maximise this?
 - What is the optimal deployment of the various resources across the country?
- All initiatives must be quantified and confirmed.

Conclusions

- The 2010 FWC will be powered and broadcast!
 - But we will not be in the “honeymoon” period we enjoyed during winter 2009.
- If unexpected events occur, beyond those planned for, adequate flexibility and levers must be available to ensure that not only does the event continue, but also that each person in this country (including the visitors) experience a seamless response to these events.
 - Continued engagement and interaction is required to maximise the planning opportunity that exists.
- So many uncertainties exist beyond our control, that we need to be ready to deal with.
- How privileged we are to be able to play such a pivotal role in “making Southern Africa shine”!