



**South African** Wind Energy Association  
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**IRP 2010**  
**3<sup>rd</sup> December 2010**

# Presentation outline

- SAWEA general comments
- Specific Parameters and Comments
  - Technology Assumptions
  - Targets
  - Emissions limits
  - Finance and capital costs
  - Key risks
- Conclusions



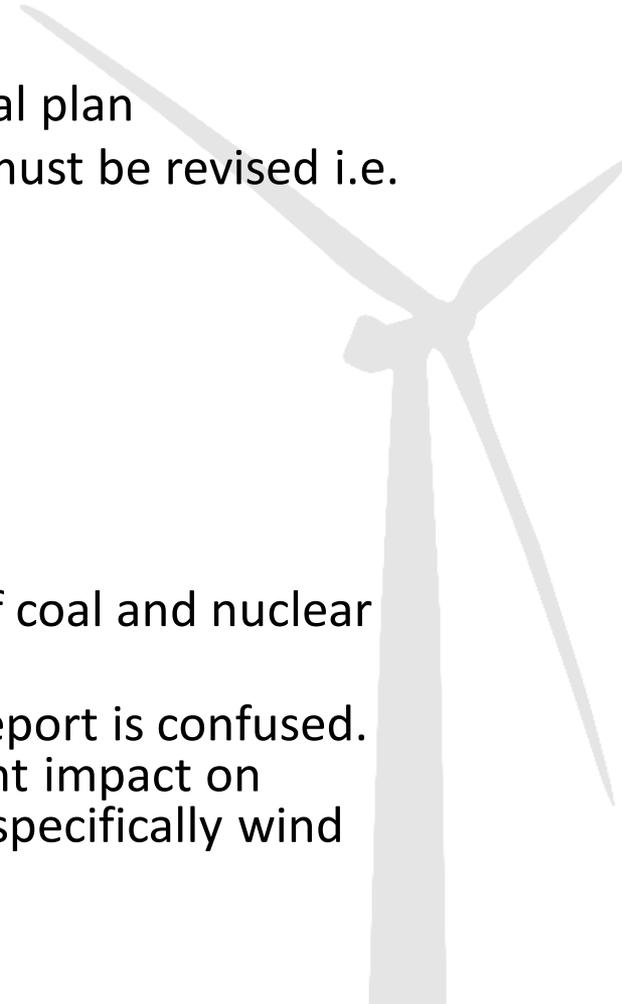
# General comments (1)

- SAWEA welcomes the publishing of the draft IRP2010
  - Significant departure from previous process which is welcomed and appreciated
  - Electricity investment plan – must give confidence to a range of stakeholders, must deliver
  - A first step in the right direction, though we would like to see more ambitious plan for wind & other RE in light of country commitment to address emissions, economic development imperatives
- MTRM should provide a strong rationale for allowing RE projects and technologies that can be quickly deployed & de-risk the economy to receive greater emphasis



# General comments (2)

- Overall purpose
  - IRP 2010 are scenarios meant to inform a final plan
  - Scenarios make assumptions that we argue must be revised i.e. low carbon route will cost too much
- Analysis & implications of plan by 2030
  - Base load coal will still be 63% of total mix
  - Renewables will be 7,5%
  - Plan does not highlight the real mix
  - Misrepresents the true relevant important of coal and nuclear and renewables
  - **Plant availability** vs **capacity factor** in EPRI report is confused. This must be corrected as this has a significant impact on modelling and contribution of technologies, specifically wind



# General comments (3)

- The IRP2010 itself states that it “envisages a dramatic transition from a traditional coal-based electricity industry toward a low carbon environment.”
  - Limited early uptake of RE does not reflect this, given the strong potential for RE
  - RFI highlighted early potential for larger scale uptake
  - The return to coal in 2028, or tapering off of wind & RE does not support the above objectives of IRP2010
- The cost parity over time should signal a greater uptake of RE – this is not evident
- Macro-economic benefits of wind (manufacturing, job creation, rural development, agricultural stimulus) can’t be realised unless there is a substantive target to attract manufacturing



# Tabulated Targets

- Key issues regarding overall targets
  - Build rate 2011 to 2015 averages 260MW; from 2016 to 2020 increases to 800MW/pa
  - Much lower than what is desirable to stimulate industry long term, deal with climate change commitments & deliver energy security
  - TBC



# Technology assumptions

- Key issues
  - 200MW by 2011: unless procurement processes speed up this will not be possible, could set up industry for early 'non-delivery'
  - 700MW for IRP: is REFIT 1 the cost basis?
  - Overnight capital cost is reasonable, but likely will be lower. How do we account accurately for this drop?
  - Lower, more realistic costs = higher wind allocation given ability to quickly deploy
  - 29,8% capacity factor assumption flawed - needs proper validation before it can be used as the basis for projections
  - Report discriminates against wind: assumes zero portfolio availability as contribution to reserve margin
  - Lead times for wind = 3 years:
    - assumption not valid for the projects that have already been approved by DWEA, or projects that are well advanced in EIA
    - Has IRP taken into account the RFI project submissions



# Capital Costs

- **Capital costs, overnight costs**
  - Underestimated for coal: Kusile/Medupi experience is case in point
  - EPRI costing does not properly reflect costs of localisation
  - Pre tax IDC is too low, not capitalised but Eskom allowed to capitalise Work Under Construction – playing field not level
  - No proper details on debt/equity ratio, which in some areas are too low - 70/30 for IPP's, thus must reflect cost
  - 8% IRR too low for IPP's/developers – even Eskom needs 10% to meet its financial obligations (parliamentary presentation)
- **Unserviced Energy Costs**
  - Costs too low
  - Impact of insufficient energy to serve economic growth severely underestimated
  - Reliance on EEDSM initiatives to alleviate the immediate problems unrealistic, though EEDSM very important
  - MTRM plan highlights need for rapid deployment and risk of non-delivery



# Emissions Limit 3

- Emissions Limit 3
  - Real cost of coal is not reflected
  - Water consumption mentioned, but not costed
  - WWWW
- Carbon taxes/impacts
  - 2c/kwh levy – escalation over time not clear?
  - Carbon tax sensitivity analysis in model
    - Impact on tariff path, not overall desired allocation
    - Impact of carbon tax on optimal allocation must be modelled
    - 2c/kwh must be allocated to next round financing of RE/wind



# Key risks

- Build rate
  - The assumption re cranes: unjustified in context of WC2010
  - Suppliers will bring in cranes a part of agreed build programme with developers – contract obligations/terms
- Stability
  - Germany as an example for capacity credit/firm capacity is not realistic for the SA environment given the resource availability and actual results from site level monitoring
  - 30% is a more accurate figure
- Mitigation options
  - Incorrect assumption: given the impact of de-risking the economy, financial and development impact is high. This must be reviewed
  - 6.3: Time frames: as per the RFI, this plan does not take into account the advanced stages of a large number of wind farms, even if these do not make it in round 1



# Conclusions

- Eskom Fleet Performance
  - The Eskom capacity factor we believe is over estimated
  - Given current fleet, lower availability is likely, with a serious implications for energy security despite Medupi / Kusile roll-out
  - Uncertainty reflected in MTRM
- In this context SAWEA would argue that the IRP should make larger provision for wind & renewables
- An enabling regulatory, tariff & competitive environment is essential to the introduction of non-Eskom generation
- Eskoms current role will need to be clarified (single buyer & system ops) so that the right signals are sent out re the immediate and longer term role of developers/IPP's

