Presentation for public consultation on national energy planning

Project 90 by 2030

Scope of this presentation:

I. Fundamental process issues
II. IRP assumptions
III. Base case comments

I. Fundamental process issues

- Public consultation

1. Was all the information available?

What we are therefore inviting the public to do is:

- Make input regarding the assumptions we have used;
- Comment on the Base Case scenario we have modeled;
- Comment on any other scenarios we should to consider;
- Make any other input relevant to the process of developing the IRP and IEP.

Source: DoE media release

7. IRP ANNEXURES (to be found at www.energy.gov.za)

7.1 EPRI Report (Technology Costs)

7.2 Demand Forecast

7.3 Technology Learning Rates

7.4 Discount Rate Presentation

7.5 Additional Assumptions Report

Not available ⇦

Source: Gazetted IRP Update 25 Nov 2016

- Public require **ALL** information used in development.
  - Not just what DoE determine required.
- Other important documents:
  - MACE recommendations
  - Nuclear costs study

Action:

- **DoE needs to provide all the relevant information.**

2. Was enough time given?

- Incomplete information was made available: 28th Nov.
- First workshop: 7th Dec
  - Also start of government school holidays
- Presentations required by 5th Dec
- For Gauteng, 5 working days, over 700 pages material.
  - DoE have had 6 years….

Action:

- **DoE must allow adequate time to review and analyze material**

3. Process is fundamentally flawed

The Department of Energy's process for the update of the IRP has set four key milestones, which are (1) settling the key assumptions; (2) developing a base case (Starting point); (3) modelling and analysing the various scenarios and finally (4) developing the final plan taking into account the various scenarios and policy positions.

The first and second milestones have been completed and are the basis of the planned public consultation process. The third milestone, which involves testing various scenarios and sensitivities, is currently under way. The fourth milestone, which relates to policy adjustment, will follow once public consultations and scenario analysis are done.

Critically important steps

Source: Minister of Energy, Media release, 30 Nov

Action :

- **DoE must include public at the most important steps.**

Way forward: 5 steps

a) Immediately provide **all documentation**

b) Any comments from this round of public consultation are **starting comments** only to guide next section of work.

c) Once scenarios have been properly developed (based on written public input) THEN a final plan is drafted, and **ALL scenario outputs** and **final draft** are released for a second round of public consultation, with adequate time (60 days).

d) Final approved plan must have a companion document showing how public concerns were addressed, and explanations given as to choices made.

e) Both IEP and IRP must be regularly updated as mandated by policy.

II. IRP assumptions

- Key concerns

1. Energy Demand

- All that is certain is that the future is uncertain.
- Do not want to overbuild, neither constrain productivity by insufficient energy.
- Currently a low energy demand would be more suitable, but this could change.
- Therefore need flexible solutions. **Small scale, distributed energy solutions that can be built quickly.**
- Base case assumptions do not address this adequately:

  “the IRP Update Base Case uses only one forecast”.

2. Costs

- LCOE not listed directly in the IRP document. Why?
- No cost estimates given for entire base case option (or vs scenarios)
- Rand: Dollar exchange rate from Jan 2015.
- Most costs come from EPRI 2015 report.
  - Concerns around using EPRI numbers were expressed for the IRP 2010.

- Renewables:

IPP office bid window 4.

  - Wind: 80c/kWh, PV: 93-108c/kWh whereas it is should be ~62c/KWh, **bid window 4 expedited** – most recent.
  - Choosing costs that are **too high**

- Nuclear:

"A hybrid cost is used for Nuclear technology based on the study commissioned by the DoE Nuclear Branch"

  - Where is this study? Not available – so how can we comment?
  - 97c/KWh. CSIR: 130-150c/kWh, EPRI 2015: 150-195c/kWh
  - Choosing costs that are **too low**.

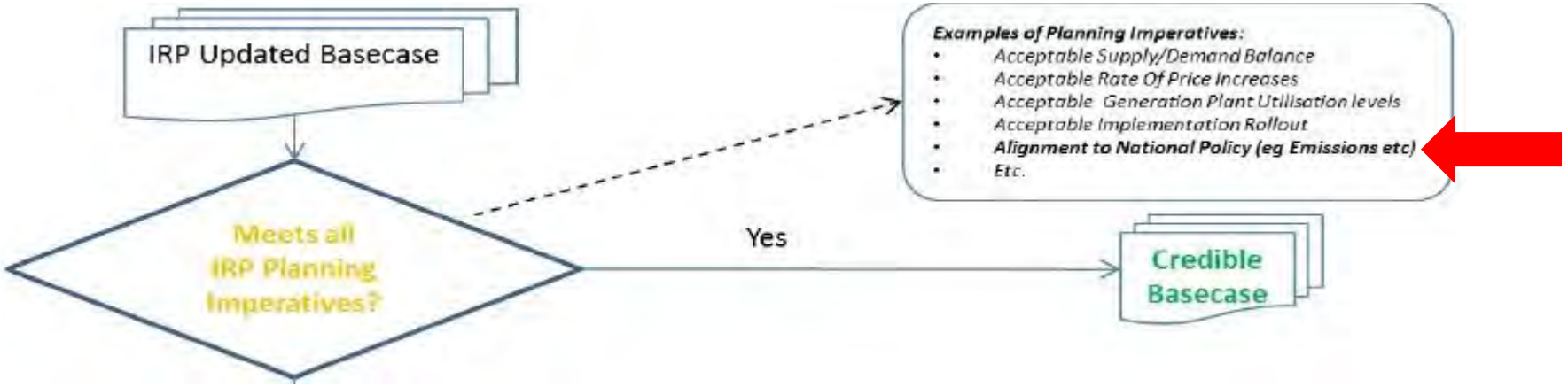
3. Eskom Plant Life

- Assumes decommissioning after 50 years.
  - Full schedule in Annexure C, still unavailable.
- As better technologies become available: cheaper, less water use, less CO_2 emissions, less pollution etc, then some plants should be decommissioned EARLIER.
- No provision made for this, in fact under the list of scenarios:

  ‘Eskom Plant Life extension’

4. Emissions

- Assumes moderate decline rather than carbon budget.
- DEA already objected to this.
- IRP planning imperatives:
  - Alignment to National Policy (e.g Emissions etc)
  - Fails this requirement.



5. Annual RE build limits

- "The Base Case maintains a number of policy positions imposed in the IRP 2010-30 in particular an annual build limit of new capacity for wind (1600 MW) and photovoltaic (1000 MW)".
  - 6 year out of date
  - No justification.
  - Needs to be backed up by independent study.
- All Ministerial determinations are committed, therefore:

  In 2020: PV: 2811 MW

  Wind: 4006 MW

- **Energy efficiency**

- In an energy inefficient system such as SA, much cheaper and faster to save a unit energy than build new capacity.

- **Embedded generation**

- Will radically change the demand, municipal income, energy use profiles etc.

- These should be fundamental to plan development, rather than separate scenarios

Conclusions on assumptions

- Need the full documentation on assumptions
- Need the DOE Nuclear Branch cost study
- Build should be able to accommodate changing demand
- Costs are biased toward nuclear, against renewables
- Some Eskom plants could be retired earlier
- Emissions must match international commitments
- If any RE build limits, require proper justification

III. Base case comments

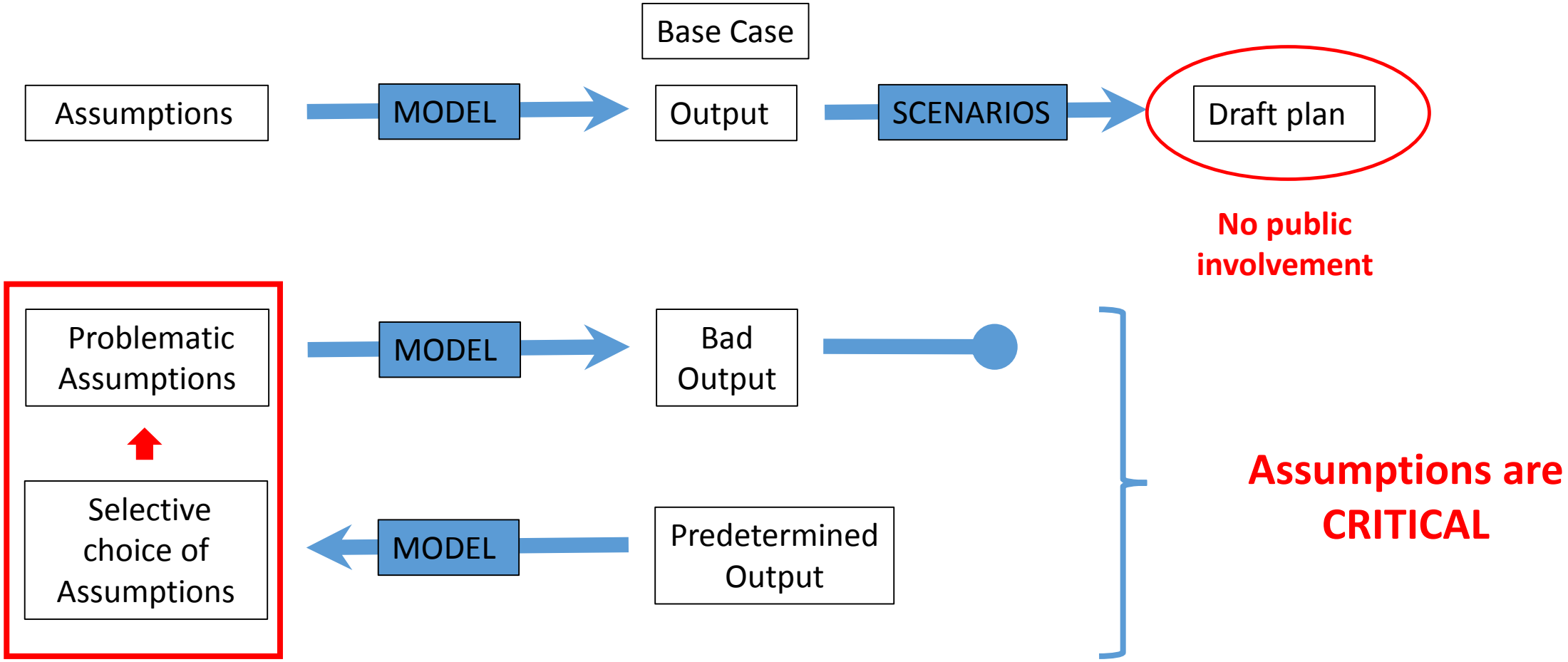
- Base case is clearly not a close to the end product, as pointed out by Minister of Energy in press release for 30 Nov.

  "the final IRP will ultimately be quite different from that illustrated in the base case."

- Serious concerns with a number of the assumptions, so commenting on the outputs from model with questionable input data is not productive.

Action:

- **DoE needs to address concerns with assumptions before continuing with further work.**



Both IRP assumptions and the public participation process as they currently stand must be improved

Thank you

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BY 2030

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