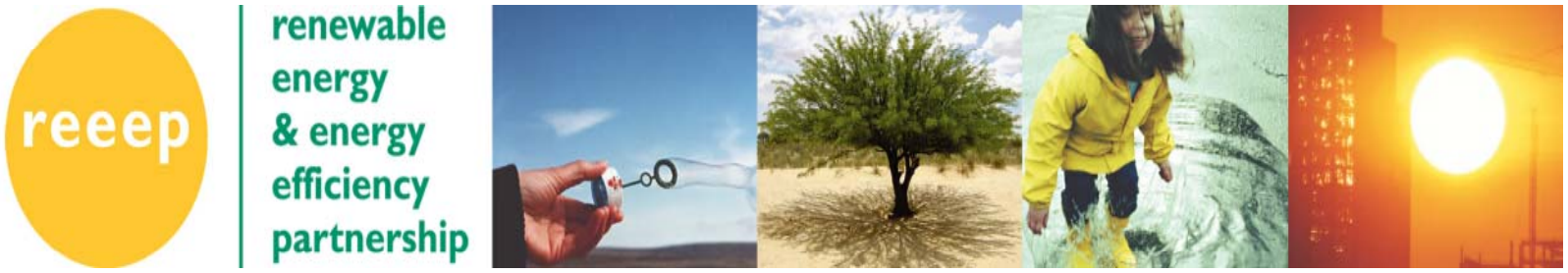

PROCUREMENT MECHANISM FOR RENEWABLE ENERGY RESOURCES IN NAMIBIA

By
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PRESENTATION OUTLINE

1. BACKGROUND
2. RE PROCUREMENT MECHANISMS
3. INTRODUCTION
4. RET COST INFORMATION
5. PROGRAME COST CALCULATOR
6. SCENARIOS OF FUTURE RE EXPANSION IN NAMIBIA
7. TARIFF CALCULATOR
8. CONCLUSION
9. RECOMMENDATIONS

1. BACKGROUND

Objective: To develop a framework & procurement mechanism for renewable energy resources to ensure sustainable, transparent & fair compensation

- Renewable Energy Technologies (RETs) considered are; Solar (CSP & PV); Wind; Biomass including land fill gas & Small Hydro
- Methodology adopted:
  - Comparative analysis of different RET procurement instruments, REFIT calculator developed
  - Study tours
  - Interviews
  - Stakeholder workshops
  - Document being finalised- Study completion: April 2011.

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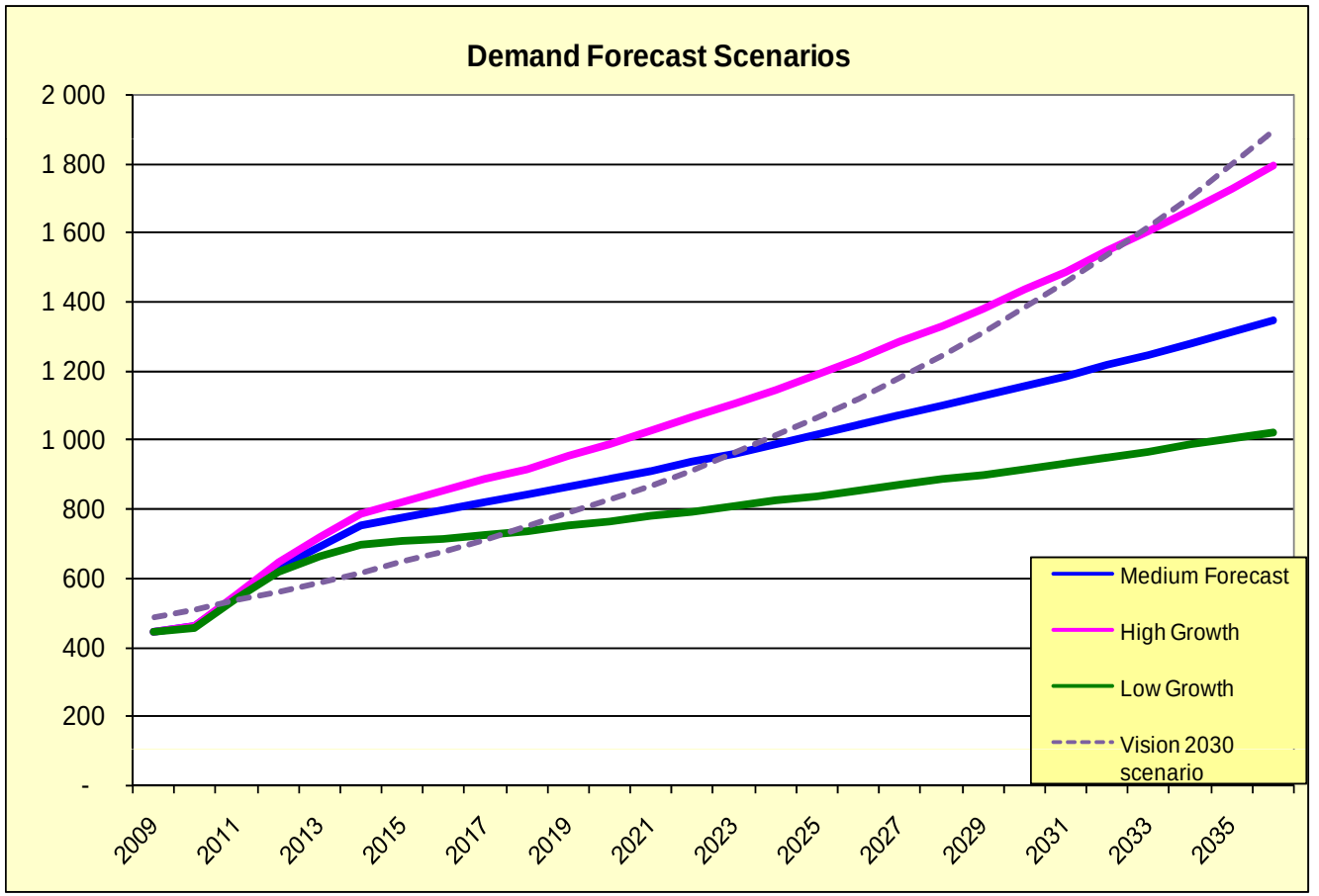
2. INTRODUCTION

Electricity demand is increasing with projections from various studies at 3-6% pa



2. INTRO- REA CHALLENGES

- Abundant RE resources in Namibia; wind, solar , biomass
- Only solar has gained some market access; limited to off-grid applications,domestic & institutional water heating.
- 3 license applications approved by ECB for wind & 1 for biomass (proof of concept)
- Pricing mechanism for RE resources is a major bottleneck to large-scale development of RE projects
- Generally, the optimum utilisation of RETs requires a combination of ***appropriate (deliberate) policies*** & a favourable ***investment framework***

5. PROGRAM COST CALCULATOR

To calculate the program cost, the following information is required:

1. the specific cost of the relevant RETs
2. the amount of electricity produced by each RET (product of capacity, CF and the hours of full load)

NB: In a case like in Namibia where government has not defined a quantitative target for the expansion of RE in the power sector, assumptions have to be made.

7. TARIFF CALCULATOR

- REFIT = Cost covering tariff (tariff calculator is cost calculator)
- Designed in different ways
- 1. Constant tariff (constant over all years, e.g. Germany)
- 2. Variable tariff (considering price changes of variable cost, e.g. Spain, Italy)
- Variable Tariff has **3 advantages:**
  - initial tariff is lower
  - Better adaption to real cost dynamic (annual cost increases)
  - Risk level is reduced (positive impacts on project finance)
- The following calculator is designed to calculate a variable tariff (yellow boxes = assumptions, red boxes = outcomes)
- 2 parts: tariff calculator, program cost calculator

8. CONCLUSION

Considering the 3 scenarios :

- The absolute program cost depends on the size of the program (additional capacity); the same holds for the increase of the final consumer price
- The RET-mix matters. CSP & PV are high cost RETs. RETs with high hours of full load have significant impact on the program cost.
- The running cost play an important role for the future dynamic features of the specific cost & for the FIT development; they must be considered critically
- Even though the FIT is increasing, the price gap decreases with the conventional power price increase.
- A REFIT program should start with generous tariffs (that are adapted after a successful start); and must be revised after some time .
- Additional instruments like stand-by-guarantees can help to reduce financing cost and thus help to limit the program cost.

8. CONCLUSION

- The Total Program Cost affordability is dependent on several factors, including POLITICAL WILL
- RE projects depend on proper planning, e.g. Integrated Resource Plan
- The RE Procurement Study is;
  - a supportive function (to estimate the impacts of policy decisions)
  - no substitute for bold political decisions, e.g. grid rural electrification master plan
  - a learning procedure (the specific cost figures will

9. RECOMMENDATIONS ON PROCUREMENT MECHANISM

The recommended 4 mechanisms & the applicable technologies are:

- Tendering for solar (CSP) & large wind based generation systems, i.e. for CSP & wind > 500kW in installed capacity;
- REFIT for small wind, small hydro & biomass including landfill gas, i.e. <500kW;
- Net-metering for photovoltaics; &
- Other support measures like soft loans, grants, tax breaks, etc to support all the above instruments & continue promoting rural and off-grid electrification.

9. RECOMMENDATIONS ON PROCUREMENT MECHANISM

- MME Minister advised to proclaim regulations to govern the RET procurement (as empowered by Section 43 of the Electricity Act of 2007)
- ECB to administer the regulations which must be simple, comprehensible & transparent.
- National Energy Fund be transformed through regulations to cover RETs as well.

THE END- THANK YOU