Enabling Competitive Bidding for Renewable Energy: Challenges and Implications

Ajit Pandit

Director, ABPS Infrastructure Advisory Private Limited

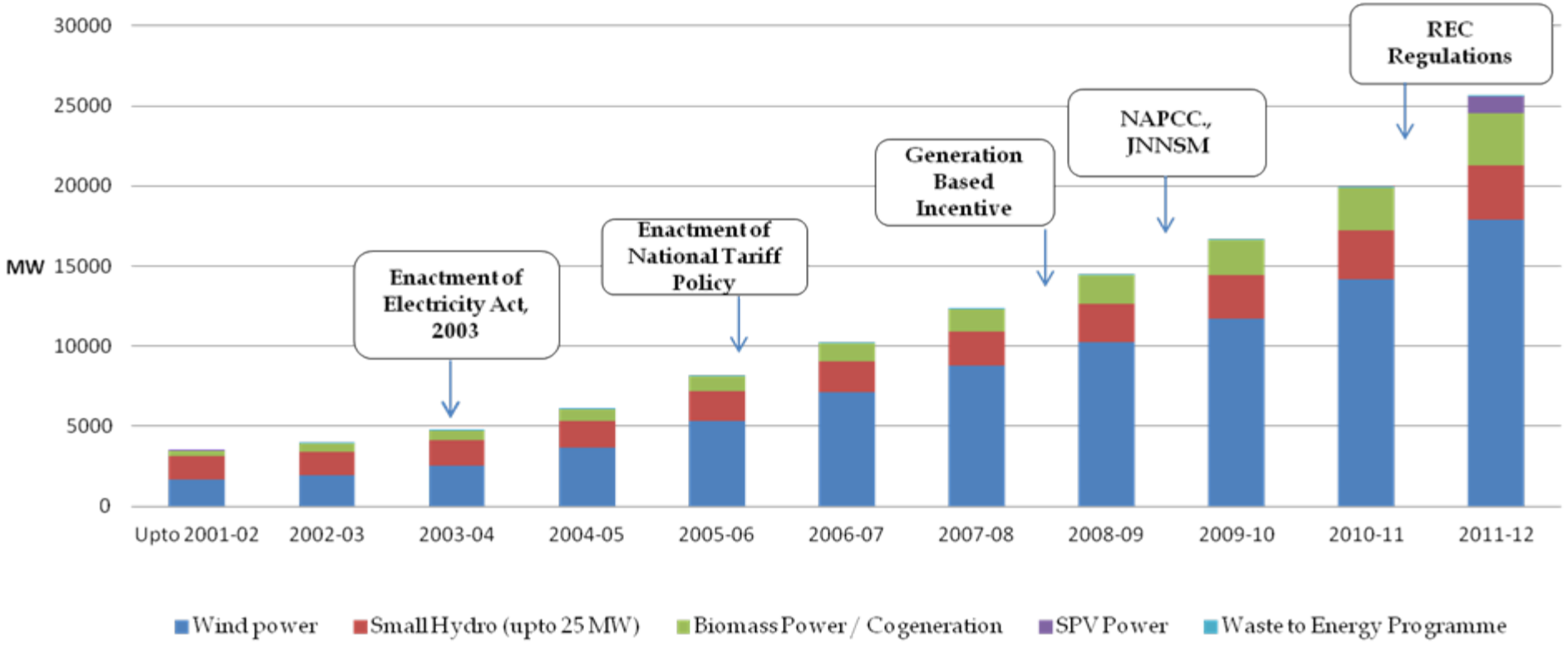
Roundtable on *"Renewable Energy Procurement through Competitive Bidding: Challenges and Way Forward"*

September 11, 2012, India Habitat Centre, New Delhi

Agenda

- Context setting
- Existing Legal & Regulatory framework
- Experience in competitive bidding for renewable energy
  - *JNNSM*
  - *International experience- UK, Brazil*
- Key Learnings from International experience of Competitive Bidding
- Competitive Bidding Guidelines: Key Considerations
- Way Forward

Renewable Energy Scenario



Source : Ministry of New and Renewable Energy

RE capacity (25.7 GW) forms ~ 12% of total generation capacity (206 GW) in the country.

In energy terms, it constitutes ~ 5.5% of total consumption

MNRE Targets for RE capacity Addition during 12th plan

Resource	2012-13	2013-14	2014-15	2015-16	2016-17	12th Plan
Wind	2,500	2,750	3,000	3,250	3,500	15,000
Solar	1,000	1,000	2,000	2,500	3,500	10,000
Biomass	350	625	825	950	1,300	4,050
Small Hydro	350	400	400	450	500	2,100
Waste-to-Energy	40	60	100	100	200	500
Tidal/Geothermal	1	2	3	4	4	14
Total (MW)	**4,241**	**4,837**	**6,328**	**7,254**	**9,004**	**31,664**

Source: Working Group Report on New and Renewable Energy for the 12th Plan (FOR RPO report)

According to press release by PIB of August 2012, 12th Plan proposals envisage 29,800 MW of Grid Connected RE projects

Ground realities - Current RE market

- Discontinuation of AD benefit
- Uncertainty on GBI
- Variation in State-wise RPO targets Vs NAPCCC targets
- Shortfall in RPO compliance by Obligated Entities & Enforcement actions lacking
- Delay in payments from DISCOMs/ Lower priority in payments
- Economic slowdown
- RE installed capacity Vs Untapped RE Potential in many States

Existing Legal & Regulatory framework...1/2

❖ Determination of tariff under **Section 61 of EA 2003**

The Appropriate Commission shall, subject to the provisions of this Act, ***specify the terms and conditions for the determination of tariff****, and in doing so, shall be guided by the following, namely:-*

… … …

(h) ***the promotion of co-generation and generation of electricity from renewable sources of energy;"***

❖ Adoption of Tariff through bidding process as per **Section 63 of EA 2003**

Notwithstanding anything contained in section 62, the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding ***in accordance with the guidelines issued by the Central Government."***

Competitive Bidding Guidelines for RE are yet to be notified by Central Government

Existing Legal & Regulatory framework...2/2

- **Clause 6.4 of NTP** enables RE procurement via preferential tariff route and **envisages competitive bidding** (within same type of RE source)

  "It will take some time before non-conventional technologies can compete with conventional sources in terms of cost of electricity. Therefore, ***procurement by distribution companies shall be done at preferential tariffs determined by the Appropriate Commission****.*

  ... through competitive bidding process under Section 63 of the Act ***within suppliers offering energy from same type of non-conventional sources."***

- **Clarification on Clause 6.4 by MOP,** dated April 19, 2011

  ....

  Keeping in view the less developed non-conventional technologies presently vis-a-vis technologies of conventional sources in terms of cost of electricity, the policy provides that ***procurement by distribution companies may be done at preferential tariffs determined by the Appropriate Commission depending on the circumstances at the time of procurement***

Early initiatives to introduce Competitive Bidding for RE faced legal hurdles - 1/2

- **Jan 18, 2005: KERC issued Order of tariff for RE power procurement**
- **South Indian Sugar Mills Association [SISMA] filed review Petition with Commission for tariff revision and further appealed with ATE in the matter**
- **May 14, 2007: ATE in its judgment on Appeal No 129 of 2005 & 41 of 2006 (SISMA Vs KERC) dated May 14, 2007 directed KERC to issue Renewable energy competitive bidding guidelines.**
- **October 23, 2007: KERC initiated process for finalization of bidding guidelines.**
- **Concerned IWPA, approached ATE to review its Judgment dated May 14, 2007.**
- **Simultaneously, Indian Wind Energy Association (InWEA) approached the Hon'ble Delhi High Court (W.P. No 7659/ 2007) in the matter.**

Early initiatives to introduce Competitive Bidding for RE faced legal hurdles - 2/2

- Simultaneously, the Karnataka Power Transmission Corporation Ltd. (KPTCL) approached the Hon'ble Supreme Court against the ATE order dated May 14, 2007.
- Nov 26, 2007: The Supreme Court has admitted the petition of KPTCL and stayed the ATE Order dated May 14, 2007 on November 26, 2007
- Dec 4, 2007: In view of the interim order dated November 26, 2007 passed by the Hon'ble Supreme Court, ATE directed that the matter should stand over.
- February 20, 2009: The Hon'ble Delhi High Court had disposed of the Petition of InWEA stating that since the matter was already ceased by the Hon'ble Supreme Court.
- In view of the above, the matter related to introduction of competitive bidding is sub-judice at present.

Competitive Bidding – RERC Order

- **Rajasthan Commission has recently withdrawn a proposed Tariff Regulation amendment on competitive bidding based procurement of Renewable Energy by the Distribution Licensee.**
- **Relevant extract of the Commission's ruling is as under:**

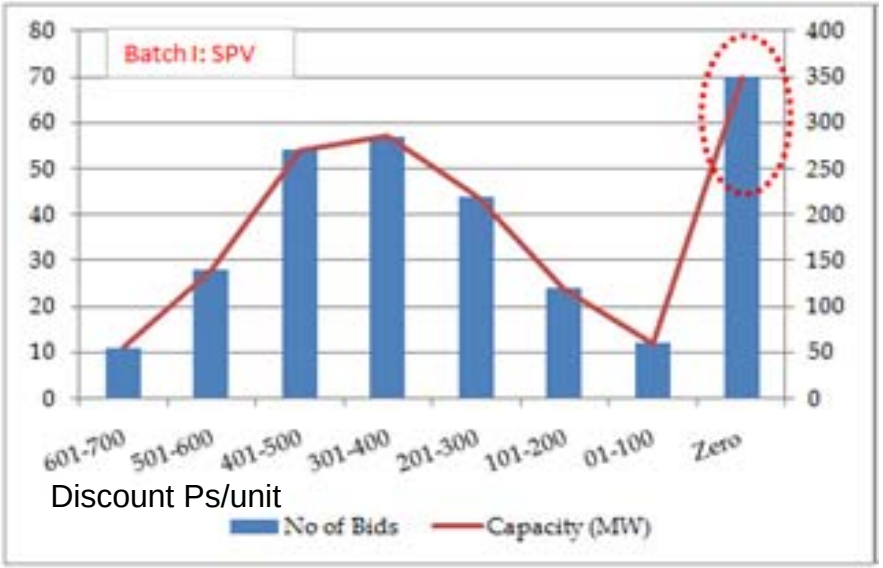
"12. It may be mentioned that the existing competitive bidding guidelines issued by the Ministry of Power under Sec. 63 of the Electricity Act do not cover procurement of power from RE sources and a Committee has recently been constituted to, inter-alia, evolve guidelines for competitive bidding for procurement of power from such sources.

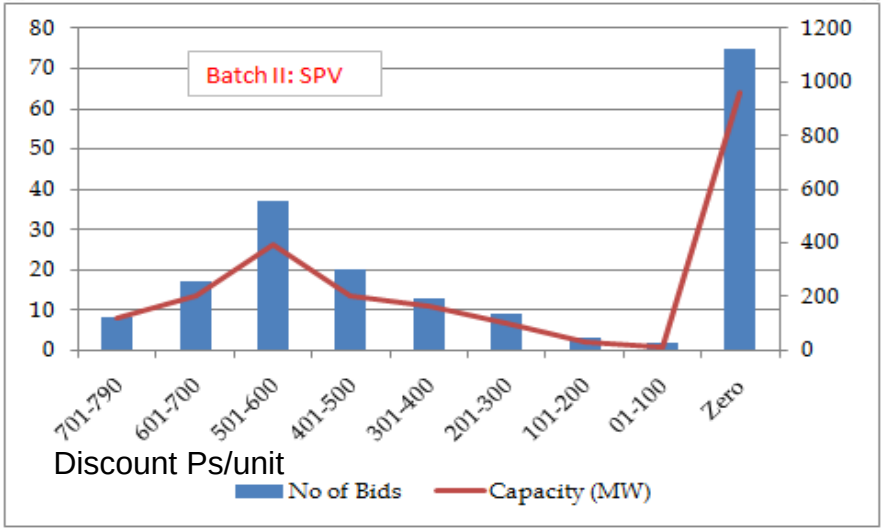
13. In the light of the fact that Hon'ble Supreme Court has stayed the directions of Hon'ble Tribunal in respect of issue of guidelines by KERC to introduce competitive bidding process and considering the stand taken by the Central Government in the Delhi High Court, ***it emerges that the Commission through Regulation or otherwise can not frame guidelines for transparent bidding under Sec. 63 or any other provision of the Electricity Act and Sec. 62 is the only available option for tariff determination in the circumstances prevailing as on date.***

Experiences of Competitive Bidding for RE

Competitive Bidding Experience- JNNSM

- **Reverse Bidding process is strictly not conformity with S63 provisions.**
- **In Batch-1 (SPV), many bidders (571 MW of 2911 MW) opted for 'zero discount'**
- **In Batch-2 (SPV), 75 of 184 bidders (960 MW of 2185 MW) opted for 'zero discount'**
- **Key success factors and Support framework for NVVNL framework**
  - Assured long term off-take through trading co. (NVVNL) with bundled power
  - Payment security mechanism backed by MNRE
  - Appropriate Risk allocation and mitigation mechanism





Competitive Bidding in UK

United Kingdom : NFFO programme

Programme Name – NFFO (Non Fossil Fuel Obligation)

Mechanism

- NFFO was introduced as a part of the privatization of electricity supply industry through electricity act in 1989,First NFFO auction was held on Oct 1990.
- Through this scheme , Renewable generator use to bid for above market PPA in different NFFO auctions.
- UK's electric companies would require to purchase power from these generators.
- Instead of Govt paying incentives to generators , Utilities were paid for the above market cost of power.
- This difference is adjusted by adjusting the tax imposed on coal-derived electricity.

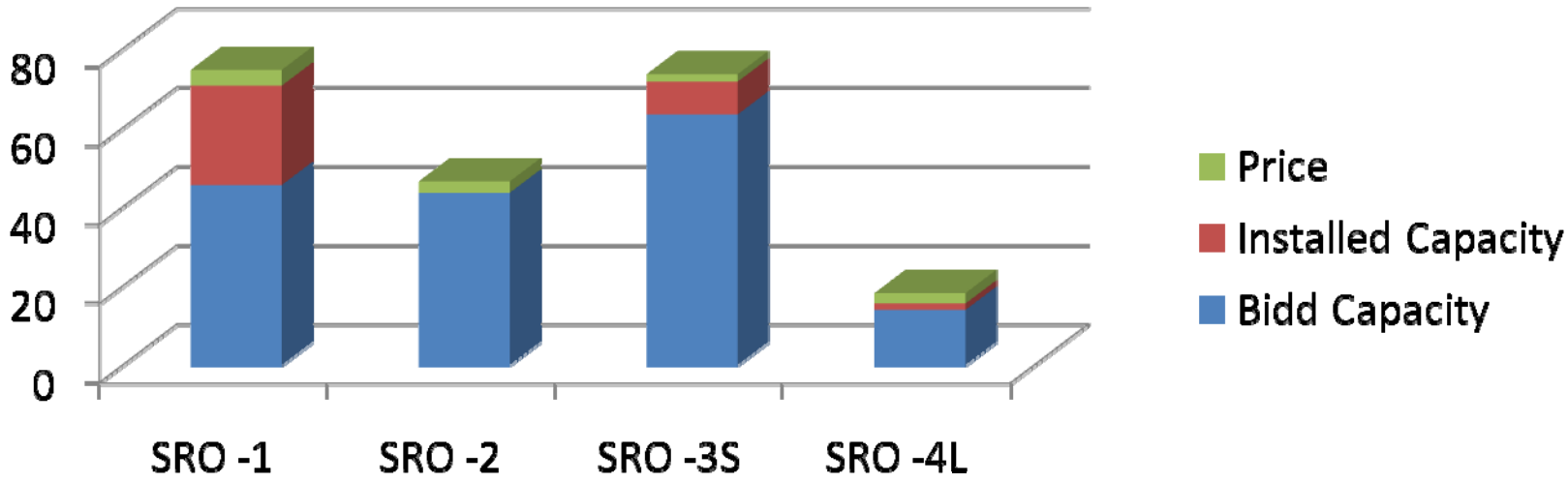
Eligible technologies –Wind, Small Scale Hydro, Sewage Gas, land fill Gas, Municipal & Industrial Waste, Energy Crops , Agriculture & Forestry Waste.

NFFO's Result

Wind Farms	Contracted			Live Projects	
	Number	Capacity (MW DNC)	Weighted Avg. Price (P/KWh)	Number	Capacity (MW DNC)
NFFO - 1	9	12.211	10.0	7	11.664
NFFO - 2	49	84.431	11.0	25	56.361
NFFO - 3L	31	145.918	4.32	9	36.807
NFFO - 3S	24	19.708	5.29	9	7.931
NFFO - 4L	48	330.359	3.53	1	2.528
NFFO - 4S	17	10.326	4.57	4	2.755
NFFO - 5L	33	340.161	2.88		
NFFO - 5S	36	28.672	4.18	2	1.690
All NFFO's	**247**	**971.786**		**57**	**119.736**

Source – Dept. Of Trade & Industry

Scotland's SRO – Scottish Renewable Obligation



Wind farm	Contracted			Live Projects	
	Number	Capacity (MW DNC)	Weighted Avg. Price (P/KWh)	Number	Capacity (MW DNC)
SRO – 1	12	45.600	3.99	7	25.130
SRO – 2	7	43.630	2.86		
SRO – 3S	11	63.430	2.19(H) , 1.89(L)	1	8.290
SRO – 4L	17	14.060	3.38(H) , 2.63(L)	2	1.62
All SRO's	**47**	**166.720**		**10**	**35.040**

NFFO & SRO outcomes

- **Positive**
  - Contracts are awarded **in phases from 1990 to 1998** which allowed the technologies and bidders to adjust/mature with each round.
  - Contracts are awarded **within technology "bands"**. This has allowed each technology to progress at an appropriate pace rather than forcing it to compete against dissimilar technologies.
  - Contracts have been granted with **long tenure for cost recovery** to faciliate financing of projects.
  - Steady decline in the price of Renewable Electricity.
- **Negative**
  - Majority of winning bidders were unable to bring their projects on-line. **There was no penalty for non performance and lengthy development.**
  - With no requirements that projects have permits before bidding into the NFFO, **numerous project faces permit denial** after winning bid.
  - Intense pressure of reducing price was favoring **only big players**, it was **not encouraging for small investors**, Independent developers etc.

Brazil : Competitive bidding programme - PROFINA

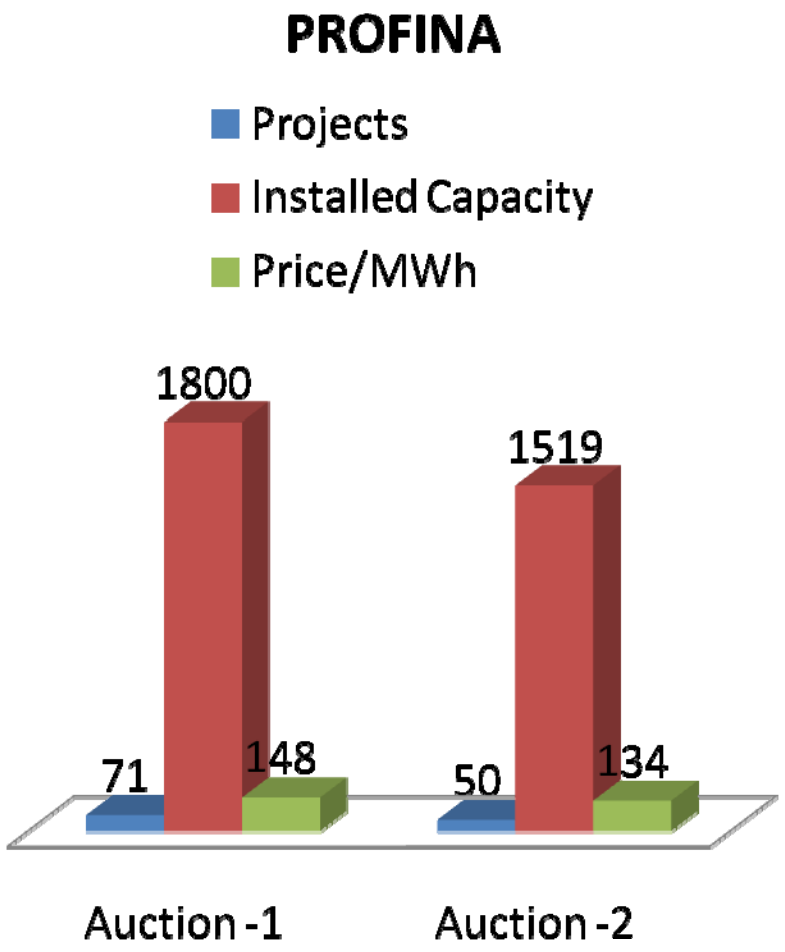
PROFINA was launched with objective to increase RE supply to 10% of Energy supply mix in Brazil by 2020.

First Auction – Dec 2009

- Auction of 71 Wind Energy Projects.
- Total Capacity of 1800 MW
- Major Successful Bidders - GE, IMPSA Wind, Siemens, Suzlon, Vestas and Wobben / Enercon
- Ceiling Price set for bidding – R$ 189 /MWh
- Avg. Price achieved – R$ 148/MWh

Second Auction – Aug 2010

- Auction of over 50 projects
- Total Capacity of 1519 MW
- Avg. Price achieved – R$ 134/MWh
- PPA of 20 years
- Major Successful Bidders -Impsa-Energimp and Iberdrola , CHESF, Contour Global and Energisa.



Key Learnings from International Competitive Bidding experiences

- There should be **penalties for non-performance** and for not sticking to the schedule.
- All the required **clearances must be available** with the developer before participating in bid process.
- Bidding should be **within specific technology bands**.
- Policy should be designed to **support all the interested participants** like small investors and manufacturers etc. It should not only favor big players.
- Policies should be **reviewed and restructured** after every round.
- Targets should be followed with proper financial and policy framework.

Competitive Bidding Guidelines : key considerations – 1/3

- **Scope of guidelines**
  - Case-I or Case-II type
  - Capacity procurement or Energy procurement
  - Separate guidelines for each RE type

- **Bidding process**
  - Single stage (stringent pre-qualification/eligibility conditions/EOI)
  - Two stage (RfS/RfP stage)

- **Preparatory work by Procuring Agency**
  - Resource assessment
  - Infrastructure development / land/clearances/approach roads
  - Evacuation and interconnection arrangement
  - Role of State Nodal Agency

Competitive Bidding Guidelines : key considerations – 2/3

- **Objective of guidelines**
  - Cost /Tariff optimisation
  - Grant/Subsidy/Incentive minimisation
  - Generation capacity addition targets
  - Time period of implementation

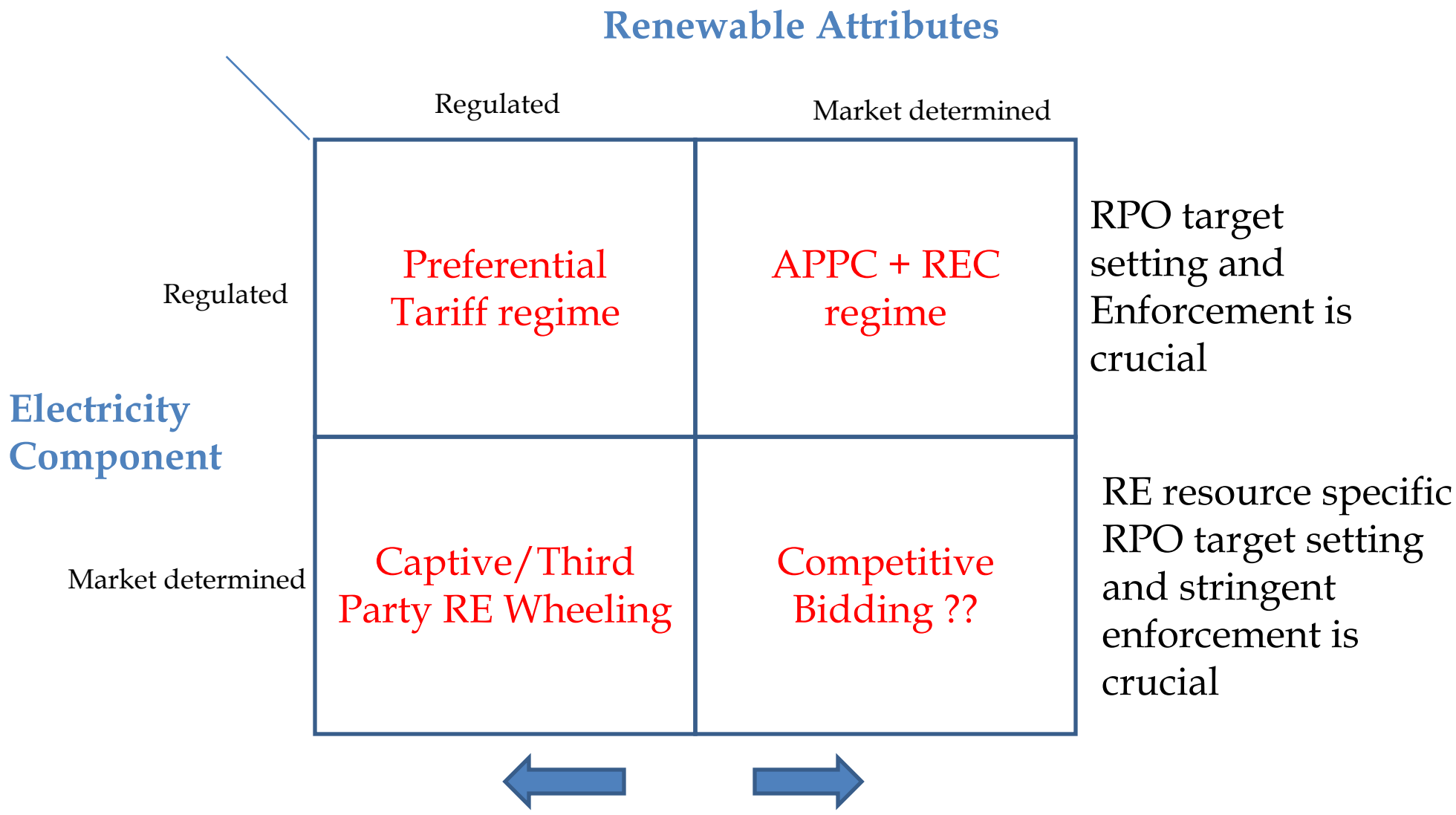
- **Bidding Parameters & Evaluation**
  - Tariff bidding
  - Reverse bidding with FiT as ceiling tariff
  - Premium over Min Tariff/Floor price (covering DSCR)
  - Viability Gap Funding/Subsidy/Grant/GBI based bidding
  - Maximum CUF / Assured RECs

Competitive Bidding Guidelines : key considerations – 3/3

- **Ensuring Compliance of Guidelines & Implementation**
  - Identification of Milestones
  - Penalty mechanism for shortfall/non-compliance of timelines
  - Monitoring and verification framework

- **Adequate Risk Allocation & Mitigation framework**
  - Development risk/clearances/land/evacuation to be addressed
  - Resource/Technology/Construction Risk to be mitigated to the extent feasible at initial or feasibility stage – Information asymmetry to be addressed.
  - Payment security requirements to be addressed

Co-existence of FITs, RECs, CBG framework



Challenges to be addressed-REC mechanism

- Improving Bankability of REC mechanism
  - **Enabling bilateral long term trade of RECs**
- Long term viability of floor and forbearance price
  - **Visibility to atleast cover debt service period**
- **Timely notification of APPC**
- Solar REC- declining price trend/Vintage based Multiplier
- Capacity Building at State level for Compliance monitoring and reporting
- **Suitable modifications to** REC framework would ensure long term sustainability of REC Mechanism and encourage competition across RE

Way Forward

- Stringent RPO M&V framework with **RE technology specific targets** alongwith enforcement standards would be pre-requisite to ensure competitive bidding to be successful.
- **Market Readiness or Preparatory work** in terms of site identification, resource assessment, land availability, clearances, evacuation arrangement which not only addresses information asymmetry but also mitigates development risk would yield maximum benefit of Bidding process with wider participation.
- Guidelines may be formulated with **pilot/demonstration bidding** in few cases to garner investor confidence and address regulatory/policy gaps, if any.
- **Co-existence of** various other policy instruments viz. FITs/RECs is likely to continue for some time. **Strengthening of REC mechanism** need to be addressed at early date.

Thank you for your attention . . .

ABPS Infrastructure Advisory

Practical Solutions to Real Life Problems

A-309, Kohinoor City
Kirol Road, off LBS Marg
Kurla (West), Mumbai 400 070
Ph: +91 22 6124 0400/ 6124 0444
Fax:+91 22 6124 0499

Email: contact@abpsinfra.com