A ASS 005 820

Electricity Auctions: An Overview of Efficient Practices

Luiz T. A. Maurer

Luiz A. Barroso

With support from: Jennifer M. Chang, Philippe Benoit, Daryl Fields, Bruno Flach, Matias Herrera-Dappe, and Mario Pereira



THE WORLD BANK Washington, D.C.

Table of Contents

FO	REWORD	vii
AC	CKNOWLEDGEMENTS	ix
EX	ECUTIVE SUMMARY	xi
1	Introduction	1
	Objectives of this Report	
	Approach	1
	Who Should Read This Report?	2
	Report Organization	2
2	Auctions-Basic Concepts	4
	What is an Auction?	4
	Why Auctions?	5
	Emergence of Auctions in the Power Sector: Historical Overview	5
	Auction Design	7
	Summary of Auction Designs	19
	Outcomes of Well-designed Auctions	20
	From Theory to Practice	20
	Auctions and World Bank Procurement Guidelines	20
	When Not to Use Auctions?	21
	If Not Auctions-What are the Alternative Procurement Mechanisms?	
	Negotiations	
3	Electricity Auctions: Experiences in Different Jurisdictions	
	Introduction	
	Classifying Country Experiences	
4	Auctions in Latin America	
	Brazil	
	Colombia	
	Chile	
	Peru	
	Panama	53
	Central America	54
	Mexico	56

5	Auctions in Asia, Oceania, Europe, North America, and Multi-Country	59		
	Asia and Oceania	59		
	Vietnam	59		
	Philippines	60		
	Thailand	61		
	South Australia	61		
	Europe	62		
	North America	65		
	Multi-country Auctions	73		
6	Auctions and Renewable Energy Sources	77		
	Overview: An Increasing Role for Renewables	77		
	Feed-in-Tariffs and Other Mechanisms to Support Renewables	78		
	Renewable Energy Auctions	80		
	Site and Technology-specific Auctions	89		
7	Main Lessons	95		
	Auction-related Procurement and Energy Policy Aspects	95		
	Market Context	96		
	Foundations for a Successful Auction	97		
	General Auction Design Issues	98		
	Technology Choice and Renewables	103		
	Implementation Issues and Participants	103		
8	Conclusions	107		
APPENDIXES		109		
	Appendix A – Electricity Procurement	. 111		
	Appendix B-The Use of Auctions in the Electricity Industry	119		
	Appendix C-Virtual Power Plant Auctions Around the World	125		
	Appendix D-Additional Experience with Renewables: FiTs and RPS	130		
,	Appendix E-Issues Related to Descending Clock Auctions	137		
	Appendix F – Approaches to Entertain Demand-Side Participation in Energy Auctions	139		
	Appendix G-Competitive Electricity Procurement-Key Attributes	143		
GL	OSSARY	148		
REF	REFERENCES1			
Figures				

Figure 2.1.	Descending Auction Dynamics	10
Figure 2.2.	Example of Hybrid Auction Dynamics	12