The renewable PPA market in Brazil

Financing views for IPPs – May 2019

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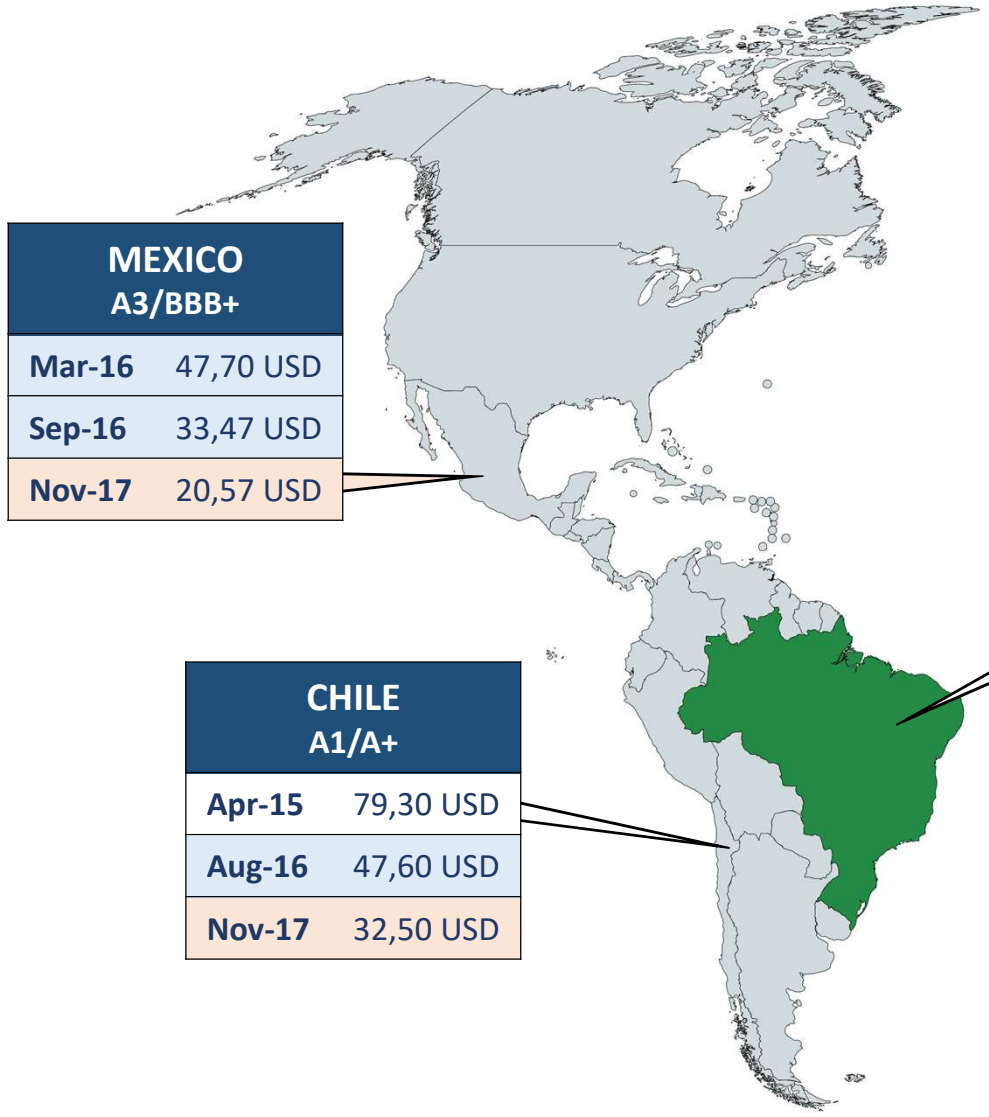
Equity returns for IPPs have dropped in auctions…



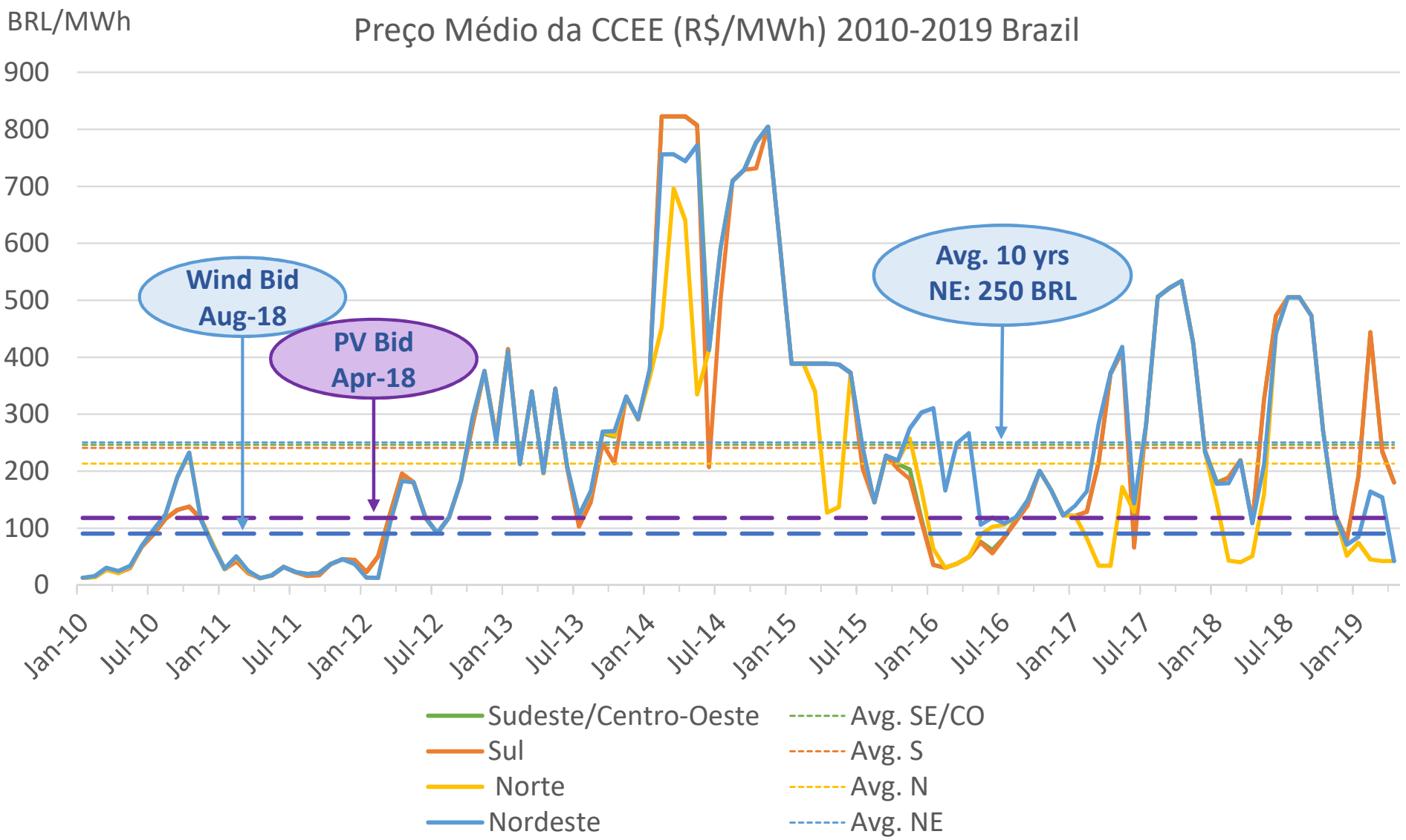
2015
2016
2017
2018

MEXICO A3/BBB+	
Mar-16	47,70 USD
Sep-16	33,47 USD
Nov-17	20,57 USD

CHILE A1/A+	
Apr-15	79,30 USD
Aug-16	47,60 USD
Nov-17	32,50 USD

BRAZIL BA2/BB-		BRL	USD
Aug-15	W	181,14	50,40
	PV	301,79	84,20
Nov-15	W	203,46	52,90
	PV	297,75	77,44
Apr-18	W	67,60	35,46
	PV	118,07	20,30
Aug-18	W	90,45	24,25

…but spot prices do not follow auctions



Is there life beyond auctions?

- The **drop of energy prices** in US$/MWh in Brazil and other Latam auctions, has not necessarily benefited industrial consumers

  ⇒ This gap is facilitating the **purchase and sale of energy outside auctions through bilateral PPAs**

- This encourages bilateral PPAs; *however*, they are expensive today since:

  - they are needed for the **financing** and/or financial investors
  - There is **lack of liquidity** in financial hedges above the 5-year threshold

Bancability: Auctions vs PPA

	Auction	PPA (bilateral)
Leverage*	70-75%	60-75%
Sizing DSCR, maturity, etc	Contractual framework, Penalties, termination	Price and curve adjustments, guarantees, intrinsic value
Debt appetite	High	Medium
Off-taker credit rating, track record	Low (if IG)	Medium/High
Forwards/Futures Mkt	Low	Medium/High
Execution Risk	Low	Medium

* Depends on revenues and tenor of the PPA/auction

Market challenges ahead for PPAs in Brazil

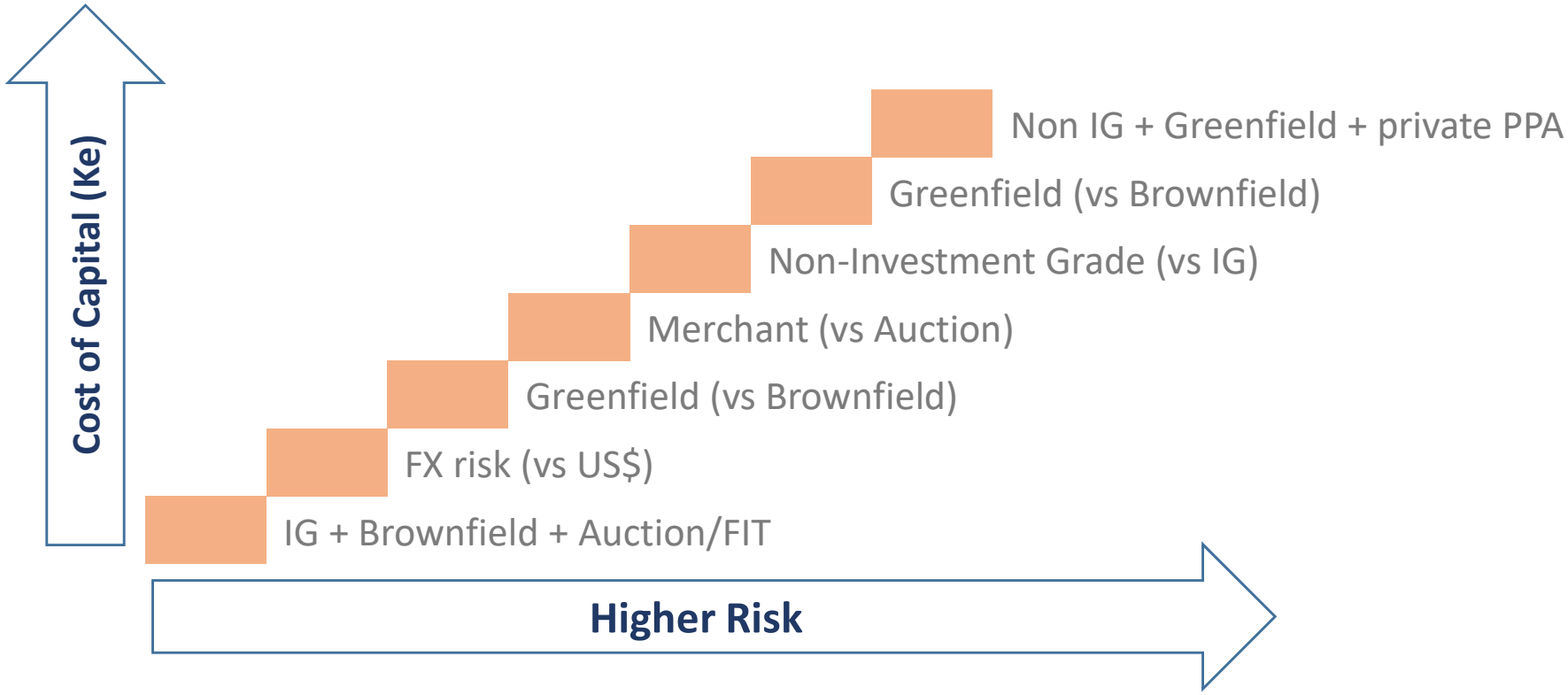
- **Credit-worthiness** of the off-taker
- **Market view** of lenders on market prices (post PPA price i.e)
- **Guarantees** under PPAs
- **Banking** liquidity
- **Financial Investors** liquidity and threshold returns

Renewable PF transactions in Brazil

Transactions	Debt MM USD	Tech	Capacity	Sponsors	Debt Providers	Financial Close Date
Santa Vitoria do Palmar Wind Complex	348,14	Wind	207 MW	Actis	BNDES, BRDE, Itau-Unibanco, Sumitomo Mitsui Banking Corporation, Bradesco, Banco ABC Brasil, ABN AMRO Bank	30/04/2018
Campo Largo Wind Complex Phase I	170,92	Wind	327 MW	Voltalia	BNP Paribas, BNDES	24/05/2018
Bento Miguel and Cutia Wind Complexes	163,31	Wind	313 MW	Companhia Paranaense de Energia	BNDES	02/10/2018
EOL Vila Acre I Wind Farm	126,22	Wind	27 MW	Omega Energia	Bradesco	04/06/2018
Juazeiro Solar PV Plant	141,49	PV	156 MW	Atlas Renewable Energy	BTG Pactual	31/03/2018
Pirapora II Solar PV Plant (Bridge Financing)	99,01	PV	115 MW	Canadian Solar, EDF	Banco do Nordeste do Brasil	02/11/2018
Sol do Futuro Solar PV Plant	71,42	PV	78 MW	Atlas Renewable Energy	BTG Pactual, Bradesco	29/06/2018
Pirapora I Solar PV Plant (Additional Facility 2018)	59,06	PV	192 MW	EDF Renewables, Canadian Solar	IDB Invest	17/10/2018

Source: IJ Global

Equity returns outside auctions



Outside auctions, the increase in revenues in US$/MWh should compensate a higher cost of capital (Ke) for the additional risk

Analysing your options: Auctions vs PPA

100 MW PV case	Auction	PPA 1	PPA 2
Revenues BRL/MWh (2018 fig)	118 BRL	130 BRL	150 BRL
Leverage	[50%]	[50%]	[60%]
Tenor Financing	20y	15y	15y
DSCR BC	1,30x	1,30x	1,30x
Project IRR	-	+1,1% (vs auction)	+2,4% (vs auction)
Equity IRR	-	+1,1% (vs auction)	+3,0% (vs auction)

Net of EPC margin and without refi upside

The leverage and the merchant revenues assumptions could make an important difference in returns

Conclusions

- In **auctions**, the equity returns have dropped to single digits => you can only increase profitability assuming a higher risk profile
- The **pool price assumptions** gain importance in a market that develops outside auctions => where profitability and risk are higher
- **Off-taker** credit worthiness and a **bankable PPA** are “a must”
- Debt and financial investor **early commitments** are important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