資料1-2

東南アジアと南アジア に関して

• •	第2回石炭火力発電輸出への公的支援に関する有 識者ファクト検討会	· · · · · · · · · ·
	Miho Kurosaki	
	• • • • • • • • • • • • • • • • • • • •	
		/
		/
		/
• •	April 21, 2020	
	· · · · · · · · · · · · · · · · · · ·	/



BloombergNEF

LCOE方法論

	÷	÷	÷				÷		÷						÷	÷	÷				÷			÷			÷	÷	÷			÷		·					÷	1
	÷	÷					÷		÷						÷	÷	÷				÷			÷			÷	÷	÷			÷		·					÷	1
	÷	÷	÷				÷		÷						÷	÷	÷				÷			÷			÷	÷	÷			÷		·					÷	1
	÷	÷					÷		÷						÷	÷	÷				÷			÷			÷	÷	÷			÷		·					÷	1
	÷	÷	÷			1	÷	1	÷				1	1	÷	÷	÷			1	÷	1		÷		1	÷	÷	÷		1	÷	1	÷	1	1			÷	1
	÷	÷					÷		÷						÷	÷	÷				÷			÷			÷	÷	÷			÷		÷					÷	1
÷										÷																				+										4
•																																								1
•																																								1
	÷	÷				1	÷	1	1				1	1	÷	÷	1			1	÷	1		÷		1	÷	÷	÷		1	÷	1	÷	1	1			÷	1
•																																								1
	÷	÷				1	÷	1	1				1	1	÷	÷	1			1	÷	1		÷		1	÷	÷	÷		1	÷	1	÷	1	1			÷	1
	÷	÷				1	÷	1	1				1	1	÷	÷	1			1	÷	1		÷		1	÷	÷	÷		1	÷	1	÷	1	1			÷	1
1									1								1																					1		1
1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			1	1
1		1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			1	
۰.	1	1					1		1	+					1	1	1			•	1			1			1	1	1			1		1				1	1	1
1				1																					1							1		1	1	1			1	1
1																																				1		1		
1																																				1		1		
1																																1	1	1	1	1		1		
1																									1							1	1	1	1	1		1		
1																																				1			1	
1																									1	1	1	1	1	1	1	1	1	1	1	1			1	
1				1																							1	1	1			1		1				1		
1																									1														1	
1																									1														1	
		1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1						1									1	1	1		1		
1		1					1		1						1	1	1								1									1					1	
1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1								1			1	1	1	1	1	1	1	1	1	1	1		
1		1	1	1		1	1	1	1	1	1	1	1	1	1	1	1								1			1	1	1	1	1	1	1	1	1			1	
ĵ.		1																							÷.									1	1	1	1		1	
1	1	1					1		1						1	1	1				1			1			1	1	1			1		1					1	
1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		ĵ,	
1	1	1					1		1	1					1	1	1			÷	1			1			1	1	1	÷		1		1						
۰.																				φ.																				. 1



BNEF LCOE Methodology

					÷			÷	÷						÷			÷	÷	÷			
					÷			÷	÷						÷			÷	÷	÷			
					÷				÷						÷			÷	÷	÷	·		
					÷			÷	÷						÷			÷	÷	÷	÷		
					÷			÷	÷						÷			÷	÷	÷	÷		
									÷						÷								
÷						+			÷			÷					÷						4

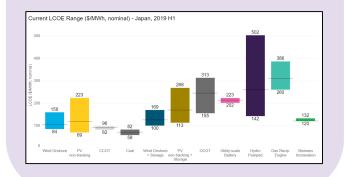
• Data sourcing

- LCOE ranges driven
 by regional variations
- Incorporates:
 - Development cost
 - Construction cost
 - Financing cost
 - O&M cost
 - Interest and tax
 - Fuel cost, etc.

Source: BloombergNEF

Definition of LCOE:

The long-term offtake price required to achieve a required equity hurdle rate for the project



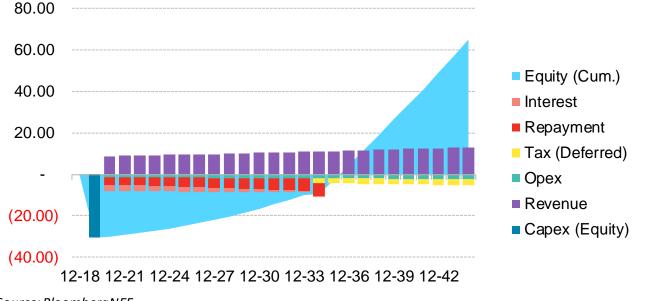
- Use of debt
 - o Leveraging
 - Base rate
 - Swap rate
 - Lender's margin
 - Term loan condition

 Macroeconomics and universal assumptions

サンプルプロジェクト

4							
r.							
•							
÷	÷	÷	÷	÷	÷	÷	
÷		÷	÷		÷		
÷							
÷							
÷		÷	÷		÷		
+					÷		
÷							
÷					÷		
÷							
÷		÷	÷		÷		
÷					÷		
÷							
÷		÷	÷		÷		
÷							
÷		÷	÷				
٠							
÷	÷	÷	÷	÷	÷	÷	
		÷	÷		÷		
÷							
÷							
÷							
		÷	÷		÷		
÷							
÷							
÷	÷	÷	÷	÷	÷	÷	
٠		÷	÷		÷		
÷	÷	÷	÷	÷	÷	÷	
÷	÷	÷	÷	÷	÷	÷	
÷							
÷	÷	÷	÷	÷	÷	÷	
÷							
÷		÷	÷		÷		
÷		÷	÷		÷		
٠		-	-				





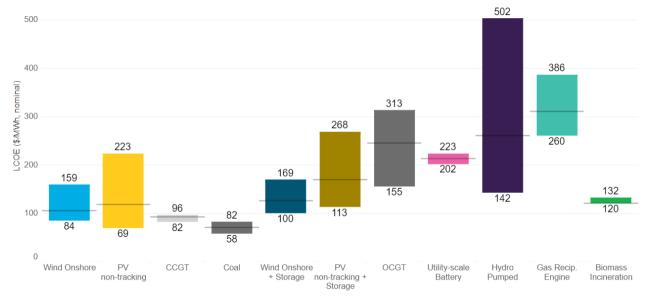
Source: BloombergNEF

Source: BloombergNEF

BloombergNEF

Similar analysis is done for all major generation technologies

Current LCOE Range (\$/MWh, nominal) - Japan, 2019 H1



Source: BloombergNEF

東南アジア マレーシア フィリピン

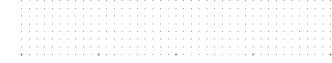


南アジア バングラデシュ パキスタン

																																				1				
•																																							•	
							÷		÷					÷					÷																					
							÷		÷					÷					÷																					
÷										÷										۰.										÷										÷
																																								÷
Ĵ.							÷	÷	÷				÷.	÷		÷.			÷				÷.	2	÷.	÷.		÷.			2	÷.	÷.			÷	÷.	÷.	Ĵ.	Ĵ
																																								Ĵ
÷							÷	÷	÷	÷			÷.	÷		÷.			÷	2			÷.	2	÷.	÷.		÷.		÷.	2	÷.	÷.			÷	÷.	÷.	Ĵ.	÷
																																								Ť
2							÷	2												1																			1	1
																																							1	1
1							1		1					1		1			1						1	1		1				1							1	1
1							1		1					1		1			1						1	1		1				1							1	1
1							1	1	1				1	1		1			1				1		1	1		1				1	1	1		1			1	1
1							1	1	1				1	1		1			1				1		1	1		1				1	1	1		1			1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1		1	1	1	1	1		1	1	1	1		1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1			1	1			1	1
1	1	1	1	1	1	1	1		1	1	1	1		1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1			1	1			1	1
Φ.																				۰.																				



Copyright and disclaimer



Copyright

© Bloomberg Finance L.P. 2020. This publication is the copyright of Bloomberg Finance L.P. in connection with BloombergNEF. No portion of this document may be photocopied, reproduced, scanned into an electronic system or transmitted, forwarded or distributed in any way without prior consent of BloombergNEF.

Disclaimer

The BloombergNEF ("BNEF"), service/information is derived from selected public sources. Bloomberg Finance L.P. and its affiliates, in providing the service/information, believe that the information it uses comes from reliable sources, but do not guarantee the accuracy or completeness of this information, which is subject to change without notice, and nothing in this document shall be construed as such a guarantee. The statements in this service/document reflect the current judgment of the authors of the relevant articles or features, and do not necessarily reflect the opinion of Bloomberg Finance L.P., Bloomberg L.P. or any of their affiliates ("Bloomberg"). Bloomberg disclaims any liability arising from use of this document, its contents and/or this service. Nothing herein shall constitute or be construed as an offering of financial instruments or as investment advice or recommendations by Bloomberg of an investment or other strategy (e.g., whether or not to "buy", "sell", or "hold" an investment). The information available through this service is not based on consideration of a subscriber's individual circumstances and should not be construed as tax or accounting advice or as a service designed to facilitate any subscriber's compliance with its tax, accounting or other legal obligations. Employees involved in this service may hold positions in the companies mentioned in the services/information.

The data included in these materials are for illustrative purposes only. The BLOOMBERG TERMINAL service and Bloomberg data products (the "Services") are owned and distributed by Bloomberg Finance L.P. ("BFLP") except (i) in Argentina, Australia and certain jurisdictions in the Pacific islands, Bermuda, China, India, Japan, Korea and New Zealand, where Bloomberg L.P. and its subsidiaries ("BLP") distribute these products, and (ii) in Singapore and the jurisdictions serviced by Bloomberg's Singapore office, where a subsidiary of BFLP distributes these products. BLP provides BFLP and its subsidiaries with global marketing and operational support and service. Certain features, functions, products and services are available only to sophisticated investors and only where permitted. BFLP, BLP and their affiliates do not guarantee the accuracy of prices or other information in the Services. Nothing in the Services shall constitute or be construed as an offering of financial instruments by BFLP, BLP or their affiliates, or as investment advice or recommendations by BFLP, BLP or their affiliates of an investment strategy or whether or not to "buy", "sell" or "hold" an investment. Information available via the Services should not be considered as information sufficient upon which to base an investment decision. The following are trademarks and service marks of BFLP, a Delaware limited partnership, or its subsidiaries: BLOOMBERG, BLOOMBERG ANYWHERE, BLOOMBERG MARKETS, BLOOMBERG NEWS, BLOOMBERG PROFESSIONAL, BLOOMBERG TERMINAL and BLOOMBERG.COM. Absence of any trademark or service mark from this list does not waive Bloomberg's intellectual property rights in that name, mark or logo. All rights reserved. © 2020 Bloomberg.

BloombergNEF

BloombergNEF (BNEF) is a leading provider of primary research on clean energy, advanced transport, digital industry, innovative materials, and commodities.

BNEF's global team leverages the world's most sophisticated data sets to create clear perspectives and in-depth forecasts that frame the financial, economic and policy implications of industry-transforming trends and technologies.

BNEF research and analysis is accessible via web and mobile platforms, as well as on the Bloomberg Terminal.

Coverage.

Clean energy Advanced transport Commodities Digital industry

Get the app



On IOS + Android about.bnef.com/mobile

		 		 	 		 	e	 				 			e									 	
	$(x_1, x_2, \dots, x_n) \in \mathbb{R}$	 	1.1	 1.1	 		 $\sim 10^{-1}$	e	 		• • •	e + .	 	· · ·		e + -								+ + +	 1.1	
	$(x_1, x_2, \dots, x_n) \in \mathbb{R}$	 	1.1	 1.1	 		 $\sim 10^{-1}$		 				 	· · ·											 1.1	
		 		 	 		 	· · ·	 		· · ·		 · · ·	· ·		· · ·					1.1				 	
		 		 	 		 ÷		 				 	· ·											 	
		 		 	 		 ÷		 				 	· ·											 	
		 		 	 		 · ·	· · ·	 		· · ·		 	· · ·	· ·	· · ·									 	
		 		 	 		 	· · ·	 		· · ·		 	· ·		· · ·					1.1				 	
		 		 	 		 ÷		 				 	· ·											 	
		 		 	 		 · ·	· · ·	 	· · ·	· · ·	· · ·	 	· · ·	· ·	· · ·									 	
* * *		 	1.1	 1.1	 		 1.1	÷ ·	 	· · ·		* *	 	· · ·		* *								· •	 1.1	
		 		 	 		 · ·	· · ·	 	· · ·	· · ·	· · ·	 												 	
		 	1.1	 1.1	 		 1.1		 	· · ·	· · ·	· · ·	 	· 📥	S III							1	in design	i second	 1.1	
		 		 	 		 · ·	· · ·	 				 	· 🖸	21/	~ /	N V	3				ı N		<u> </u>	 	
		 		 	 		 1.1		 				 	· •) I C	ા	_		\mathbf{O}	=1			4 . .		 	
		 		 	 		 · ·	· · ·	 	· ·		· ·	 			7 . T					J	, - · ·	IE	- ·	 	
		 		 	 	1.1	 1.1	· · ·	 	· · ·		· · ·	 	· · ·							1.1				 	
		 		 	 		 		 				 									1.1		1.1	 	

Client enquiries:

Bloomberg Terminal: press <u><Help></u> key twice Email: <u>support.bnef@bloomberg.net</u>

Learn more:

about.bnef.com | @BloombergNEF