

## ข้อมูลผลการดำเนินงานด้านเทคโนโลยี

GRI Standards	Required Data	Unit	Data Collection Period			
			2019	2020	2021	2022
-	Innovation and Technology					
-	Budget for technology research and development	MMUSD	24	12	12.5	18.5
	Projects for technology research and development;	Number of project	72	66	56	65
	Phase 1 (Preliminary Study)	Number of project	10	8	5	15
	Phase 2 (Lab-scale)	Number of project	33	29	23	26
	Phase 3 (Prototype)	Number of project	8	14	14	16
	Phase 4 (Pilot)	Number of project	16	12	10	5
	Phase 5 (Deployment or Commercialization)	Number of project	5	3	4	3
	Intellectual property registrations					
	Patent	Number	12	9	19	17
	Software copyrights	Number	2	0	0	7
	Publication of the study results					
	Research paper publicized in journals and conferences	Number	12	6	8	8