

**Table 10.4** | Overview of scenario results for four illustrative scenarios: renewable electricity generation, resulting RE market shares, annual market growth rates and required annual manufacturing capacity. Both the IEA-WEO2009-Baseline and ER-2010 have a separate category for bioenergy and geothermal combined heat and power (CHP) and power-generation-only power plants—heat generation is excluded and listed in Table 10.5. "N/A": data not available, "NSM": not specifically modelled. Sources: IEA-WEO2009-Baseline (IEA, 2009; Teske et al., 2010), ReMIND-RECIPE (Luderer et al., 2009), MiniCAM-EMF22 (Calvin et al., 2009), ER-2010 (Teske et al., 2010).

	Energy Parameter								Market Development							
	Generation [EJ/y]				Percent of global demand - based on the demand projection of the analyzed scenario [%]				Annual Market growth [%/y]				Annual Market Volume [GW/y]			
	IEA-WEO 2009-Baseline	ReMIND-RECIPE	MiniCAM-EMF22	ER-2010	IEA-WEO 2009-Baseline	ReMIND-RECIPE	MiniCAM-EMF22	ER-2010	IEA-WEO 2009-Baseline	ReMIND-RECIPE	MiniCAM-EMF22	ER-2010	IEA-WEO 2009-Baseline	ReMIND-RECIPE	MiniCAM-EMF22	ER-2010
<b>Total projected energy demand by scenario:</b>																
2020	98.1	117.9	103.4	92.9												
2030	123.5	146.3	124.8	111.2												
2050	167.6	228.2	222.4	158.1												
<b>Solar</b>																
PV 2020	0.4	0.8	0.4	2.1	0.4	0.7	0.4	2.3	17	27	18	42	5	12	6	36
PV 2030	1.0	9.3	1.0	7.0	0.8	6.4	0.8	6.3	11	32	10	14	18	163	17	120
PV 2050	2.3	74.8	3.0	24.6	1.4	32.8	1.3	15.6	4	12	6	7	40	651	25	211
CSP 2020	0.1	N/A	0.7	2.5	0.1	N/A	0.7	2.7	17	N/A	40	62	1	N/A	3	12
CSP 2030	0.4		2.0	9.8	0.4		1.5	8.8	14		13	17	2		9	45
CSP 2050	0.9		5.6	32.4	0.5		2.5	20.5	4		6	6	4		11	66
<b>Wind</b>																
on+offshore2020	3.6	16.7	8.6	10.3	3.7	14.2	8.4	11.0	12	33	23	26	26	175	83	101
on+offshore2030	5.5	35.2	15.8	21.1	4.5	24.0	11.9	19.0	5	9	7	8	60	381	171	229
on+offshore2050	9.1	51.4	28.3	39.0	5.4	22.6	12.5	24.7	3	2	3	3	93	262	146	202
<b>Geothermal</b>																
for power generation																
2020	0.4	NSM	NSM	1.3	0.4	NSM	NSM	1.4	6	NSM	NSM	20	1	NSM	NSM	4
2030	0.6			4.6	0.5			4.1	4			15	2			18
2050	1.0			10.7	0.6			6.8	2			5	4			21
Heat & power																
2020	0.0	NSM	NSM	0.2	0.0	NSM	NSM	0.3	13	NSM	NSM	47	0	NSM	NSM	1
2030	0.0			0.9	0.0			0.8	5			16	0			5
2050	0.1			4.5	0.0			2.9	4			9	0			11
<b>Bioenergy</b>																
for power generation																
2020	1.2	7.9	1.8	1.4	1.2	6.7	1.8	1.5	8	33	13	10	3	37	6	4
2030	2.0	12.7	3.4	1.7	1.6	8.7	2.6	1.6	6	5	7	2	10	59	16	8
2050	3.6	15.2	21.0	2.1	2.1	6.6	9.3	1.3	3	1	10	1	13	26	40	4
heat & power																
2020	0.7	NSM	NSM	2.7	0.7	NSM	NSM	2.9	2	NSM	NSM	19	1	NSM	NSM	13
2030	1.0			5.1	0.8			4.6	5			8	6			27
2050	1.7			10.8	1.0			6.8	3			4	8			25
<b>Ocean</b>																
2020	0.0	NSM	NSM	0.4	0.0	NSM	NSM	0.5	13	NSM	NSM	70	0	NSM	NSM	4
2030	0.0			1.5	0.0			1.4	16			15	0			12
2050	0.1			7.0	0.1			4.4	4			8	1			27
<b>Hydro</b>																
2020	14.5	15.1	12.1	14.6	14.8	12.8	11.9	15.7	2	2	0	2	20	25	0	21
2030	16.8	18.9	13.4	15.9	13.6	13.0	10.1	14.3	2	3	1	1	135	151	109	127
2050	21.5	23.7	15.8	18.4	12.8	10.4	7.0	11.6	1	1	1	1	78	86	57	67
<b>Total renewables for power generation (incl. CHP)</b>																
2020	21.0	40.6	23.6	35.6	21.4	34.4	23.6	38.3	4	12	6	10	57	249	98	197
2030	27.5	76.2	35.6	67.8	22.3	52.1	20.3	60.9	3	7	5	7	232	755	322	590
2050	40.2	165.1	73.7	149.6	24.0	72.4	35.1	94.6	2	4	4	4	240	1026	280	634