

4 CSR 240-22.040 Appendix D - Scoring Tables

			Utility Cost							Environmental Cost			Risk Reduction			
			Levelized Cost of Energy w/ Allowances, €/kWh	Levelized Cost of Energy Score w/ Allowances	Levelized Cost of Energy w/ Allowances and CO2, €/kWh	Levelized Cost of Energy Score w/ Allowances and CO2	Specificity of Location Score	Utility Cost Total Score w/ Allowances	Utility Cost Total Score w/ Allowances & CO2	Currently Meets Regulated Emission Limits Score	Potential for future addition of more stringent control technologies and level of control Score	Environmental Cost Total Score	Technology Status Score	Constructability	Safety Training Requirements Score	Risk Reduction Total Score
Screened Fossil Technologies																
Conventional Baseload Technologies	Atmospheric Bubbling Fluidized Bed	BFB - 50 MW	14.0	0	16.9	0	100	3.5	3.5	85	0	10.2	100	25	50	11.3
		Atmospheric Circulating Fluidized Bed	8.4	82	10.7	81	100	29.5	28.9	85	0	10.2	100	25	50	11.3
	Subcritical PC	SPC - 500 MW	7.9	89	10.2	87	100	31.4	30.9	85	0	10.2	100	25	50	11.3
	Supercritical PC	SCPC - 500 MW	8.0	87	10.3	86	100	30.8	30.6	85	0	10.2	100	25	50	11.3
		SCPC - 850 MW	7.5	100	9.7	100	100	35.0	35.0	85	0	10.2	100	25	50	11.3
		SCPC - 850 MW - IL	7.5	100	9.6	100	100	35.0	35.0	85	0	10.2	100	25	50	11.3
Advancing Baseload Technologies	Advanced/Ultra Supercritical PC	USPC - 850 MW	7.6	100	9.7	100	100	35.0	35.0	85	0	10.2	50	25	50	6.8
		USPC - 850 MW - IL	7.6	100	9.6	100	100	35.0	35.0	85	0	10.2	50	25	50	6.8
	Integrated Gasification Combined Cycle	IGCC - 2x1 600 MW, Shell	10.6	52	13.1	52	100	19.8	19.9	85	0	10.2	50	25	50	6.8
		IGCC - 2x1 600 MW, Shell - IL	10.6	52	12.9	54	100	19.8	20.5	85	0	10.2	50	25	50	6.8
	Oxyfuel Combustion	OxyComb - 850 MW	13.1	18	16.3	13	100	9.2	7.6	85	0	10.2	25	25	50	4.5
	Supercritical CFB Pressurized Bubbling Fluidized Bed Combustion	SCCFB 500 MW PBFb - 250 MW	9.0 12.0	73 33	11.3 14.1	73 40	100 100	26.6 14.0	26.6 16.0	85 85	0 0	10.2 10.2	25 0	25 25	50 50	4.5 2.3
Intermediate Load Technologies	Combined Cycle Combustion Turbine	1x1 GE 7EA	13.9	72	15.2	71	100	26.3	25.9	85	25	12.2	100	50	50	12.0
		1x1 GE 7FA	11.1	89	12.2	89	100	31.6	31.6	85	25	12.2	100	50	50	12.0
		2x1 GE 7FA	10.2	100	11.4	100	100	35.0	35.0	85	25	12.2	100	50	50	12.0
	Combined Cycle Reciprocating Engine	1x1 Wartsila 12V46	25.2	0	26.0	0	100	3.5	3.5	85	25	12.2	100	50	50	12.0
		2x1 Wartsila 12V46	22.6	21	23.5	21	100	10.0	10.1	85	25	12.2	100	50	50	12.0
		1x1 Wartsila 18V46	21.8	26	22.6	26	100	11.6	11.7	85	25	12.2	100	50	50	12.0
	Cheng Cycle	Cheng Cycle - 7EA	13.8	73	15.4	70	100	26.6	25.6	85	25	12.2	100	50	50	12.0
	Thermal Steam Boiler	TSB - 250 MW	16.2	59	17.6	56	100	22.1	21.2	85	25	12.2	100	25	50	11.3
Peaking Load Technologies	Simple Cycle Combustion Turbine	GE LM6000PC	38.5	0	40.0	0	100	3.5	3.5	85	25	12.2	100	50	50	12.0
		GE LMS100	24.6	90	25.9	90	100	31.9	31.9	85	25	12.2	100	50	50	12.0
		GE 7EA	28.8	60	30.7	59	100	22.5	22.0	85	25	12.2	100	50	50	12.0
		GE 7FA	22.7	100	24.4	100	100	35.0	35.0	85	25	12.2	100	50	50	12.0
	Simple Cycle Reciprocating Engine	Wartsilla 12V46 Wartsilla 18V46	30.9 26.7	49 72	31.8 27.6	52 76	100 100	18.8 26.1	20.0 27.5	85 85	25 25	12.2 12.2	100 100	100 100	50 50	13.5 13.5
Baseload Technologies w/ CO2 Capture	Supercritical PC	SCPC - 850 MW w/ CCC	13.5	100	13.3	100	100	35.0	35.0	100	100	20.0	25	25	50	4.5
	Integrated Gasification Combined Cycle	IGCC - 2x1 600 MW, Shell w/ CCC	13.5	100	13.6	69	100	35.0	25.2	100	100	20.0	25	25	50	4.5
	Oxyfuel Combustion	OxyComb - 850 MW w/ CCC	14.9	0	14.3	0	100	3.5	3.5	100	100	20.0	25	25	50	4.5

			Planning Flexibility							Operability				Total Score		
			Permitting Score	Schedule	Schedule Score	Fuel Flexibility Score	Scalability / Modularity / Resource Constrained Score	Transmission Complexity	Construction Schedule and Budget Risk	Planning Flexibility Total Score	Availability Score	Technical Operability Training Score	Load Following / VAR Support	Operability Total Score	Total Score w/ Allowances	Total Score w/ Allowances and CO2
Screened Fossil Technologies																
Conventional Baseload Technologies	Atmospheric Bubbling Fluidized Bed	BFB - 50 MW	25	40	100	50	100	100	75	11.3	100	50	25	9.9	46.1	46.1
		Atmospheric Circulating Fluidized Bed	CFB 2x250 MW	25	46	68	50	100	50	75	9.6	100	50	25	9.9	70.5
	Subcritical PC	SPC - 500 MW	25	49	54	25	100	50	75	8.5	100	50	25	9.9	71.3	70.8
	Supercritical PC	SCPC - 500 MW	25	54	32	25	100	50	75	8.2	100	50	25	9.9	70.4	70.2
		SCPC - 850 MW	25	57	19	25	100	50	75	8.0	100	50	25	9.9	74.4	74.4
		SCPC - 850 MW - IL	25	59	0	25	100	50	75	7.7	100	50	25	9.9	74.1	74.1
Advancing Baseload Technologies	Advanced/Ultra Supercritical PC	USPC - 850 MW	25	57	19	25	100	50	50	7.2	100	50	25	9.9	69.1	69.1
		USPC - 850 MW - IL	25	59	0	25	100	50	50	6.9	100	50	25	9.9	68.8	68.8
	Integrated Gasification Combined Cycle	IGCC - 2x1 600 MW, Shell	25	53	37	50	75	50	50	7.7	50	25	25	5.6	50.1	50.2
		IGCC - 2x1 600 MW, Shell - IL	25	53	37	50	75	50	50	7.7	50	25	25	5.6	50.0	50.7
	Oxyfuel Combustion	OxyComb - 850 MW	25	60	0	25	100	50	0	5.4	50	25	25	5.6	35.0	33.4
	Supercritical CFB	SCCFB 500 MW	25	51	46	50	100	50	25	7.8	100	50	25	9.9	59.0	59.1
	Pressurized Bubbling Fluidized Bed Combustion	PBFB - 250 MW	25	53	37	25	75	50	0	5.2	50	25	25	5.6	37.3	39.3
Intermediate Load Technologies	Combined Cycle Combustion Turbine	1x1 GE 7EA	50	30	65	0	75	100	75	8.5	100	50	50	11.3	70.2	69.8
		1x1 GE 7FA	50	30	65	0	75	100	75	8.5	100	50	50	11.3	75.6	75.5
		2x1 GE 7FA	50	31	59	0	75	100	75	8.4	100	50	50	11.3	78.8	78.8
	Combined Cycle Reciprocating Engine	1x1 Wartsila 12V46	50	27	83	25	75	100	75	9.7	100	50	50	11.3	48.6	48.6
		2x1 Wartsila 12V46	50	28	77	25	75	100	75	9.6	100	50	50	11.3	55.0	55.1
		1x1 Wartsila 18V46	50	27	83	25	75	100	75	9.7	100	50	50	11.3	56.7	56.9
	Cheng Cycle	Cheng Cycle - 7EA	50	25	100	0	75	100	50	8.3	100	50	50	11.3	70.3	69.3
	Thermal Steam Boiler	TSB - 250 MW	50	40	0	0	100	100	75	8.3	100	50	25	9.9	63.8	62.9
	Peaking Load Technologies	Simple Cycle Combustion Turbine	GE LM6000PC	50	21	50	0	75	100	75	8.3	100	100	100	15.0	51.0
GE LMS100			50	24	0	0	75	100	75	7.5	100	100	100	15.0	78.6	78.6
GE 7EA			50	21	50	0	75	100	75	8.3	100	100	100	15.0	70.0	69.4
GE 7FA			50	21	50	0	75	100	75	8.3	100	100	100	15.0	82.5	82.5
Simple Cycle Reciprocating Engine		Wartsilla 12V46	50	18	100	25	75	100	75	9.9	100	100	100	15.0	69.4	70.7
		Wartsilla 18V46	50	18	100	25	75	100	75	9.9	100	100	100	15.0	76.7	78.1
Baseload Technologies w/ CO2 Capture	Supercritical PC	SCPC - 850 MW w/ CCC	25	63	0	25	100	50	0	5.4	50	25	25	5.6	70.6	70.6
	Integrated Gasification Combined Cycle	IGCC - 2x1 600 MW, Shell w/ CCC	25	59	100	50	100	50	0	7.9	50	25	25	5.6	73.0	63.2
	Oxyfuel Combustion	OxyComb - 850 MW w/ CCC	25	62	28	25	100	50	0	5.9	50	25	25	5.6	39.5	39.5