	2020			Diament /	MISO MTEP			
	Estimated			Planned /	Appendix	MITED		
Post of Norma	In-Service	70115	No. of Contraction	Proposed /	(BOLD =	MTEP		01
Project Name	Year	ZONE	Need Category	Provisional	Certified)	PRJID		Cost
Big Pond SS, Retire Substation	2020	1	Retirement	Planned	A in MTEP18	13831	\$	454,000.00
Eagle River Cranberry SS, DIC, 2nd Transformer	2020	1	T-D Interconnection	Planned	A in MTEP19	14906		\$202,000.00
Homme SS, New DIC	2020	1	T-D Interconnection	Planned	A in MTEP18	13787	\$	371,249.00
Lyndon Station SS, Replace Transformer and Substation Rebuild	2020	1	T-D Interconnection	Planned	A in MTEP18	14905		\$870,000.00
J821 Zenith SS Generator Interconnection Facilities and Network Upgrades	2021	1	G-T Interconnection	Planned	A in MTEP20	18567	\$	7,235,132.00
Waupaca Area Energy Storage Project	2021	1	Operational Flexibility	Planned	A in MTEP19	15947	\$	8,071,000.00
Baker St SS, Add new 115-kV bus and bus tie breaker	2021	1	T-D Interconnection	Planned	A in MTEP17	12115	\$	5,800,000.00
Birnamwood SS, DIC replace transformer and substation rebuild	2021	1	T-D Interconnection	Planned	A in MTEP18	15128	\$	130,000.00
Pine SS, DIC, Transformer Replacement	2021	1	T-D Interconnection	Planned	A in MTEP20	14907		\$165,000.00
Petenwell - Saratoga 138kV (X-43), Line Rebuild	2022	1	Reliability, Economic	Planned	A in MTEP20	18017	\$	24,500,000.00
Mudwater SS, DIC, New Substation	2022	1	T-D Interconnection	Planned	A in MTEP18	14906		\$391,500.00
Waupaca SS, DIC, transformer addition	2022	1	T-D Interconnection	Planned	A in MTEP20	18053	\$	6,900,000.00
J732 Superior SS Generator Interconnection Facilities and Network Upgrades	2023	1	G-T Interconnection	Planned	A in MTEP20	19729	\$	21,245,605.00
Birnamwood SS, DIC new substation	2023	1	T-D Interconnection	Planned	A in MTEP18	15128	\$	4,500,000.00
Petenwell - Council Creek (X-40), OPGW Installation	2024	1	Communication	Planned	A in MTEP21	19587	Ś	9,000,000.00
Weston - Sherman Street, 115kV line (Z-52), uprate	2023	1	Reliability	Proposed	A in MTEP20	14909	\$	997,000.00
Maine - Hilltop 115kV line (U-11), uprate	2023	1	Reliability	Proposed	A in MTEP20	14909	Ś	835.000.00
Venus SS, new inductor bank	2024	1	Reliability	Provisional	B in MTEP19	15945	Ś	1,800,000.00
J928 - Garden Corners SS, GIC Network Upgrades	2020	2	G-T Interconnection	Planned	A in MTEP19	16494	Ś	304,855.00
North Lake - M-38 138kV (NLKG31), Rerate	2020	2	Line Clearance	Planned	A in MTEP18	15284	\$	1,500,000.00
Forsyth SS, DIC, Add 1st Transformer	2021	2	T-D Interconnection	Planned	A in MTEP18	14905	\$	45,000.00
Garden Corners SS, DIC, add 1st Transformer	2021	2	T-D Interconnection	Planned	A in MTEP18	14904	\$	1,900,000.00
NLKG31 Tap - Greenstone 138kV, construct new transmission line	2022	2	Condition and T-D Interconnection	Planned	A in MTEP19	15933	\$	5,200,000.00
J849, Chandler SS, Interconnection Facilities and Network Upgrades	2022	2	G-T Interconnection	Planned	A in MTEP19	16492	\$	3,036,785.00
Atlantic SS, 138/69kV Bus Reconfiguration and Transformer Addition	2022		Department of the Performance	Planned	A in MTEP19	7586	\$	11,600,000.00
Presque Isle - Tilden 138kV, Loop and Uprate	2022	2	Reliability	Planned	A in MTEP19	15345	\$	15,300,000.00
Masonville SS, DIC, Substation Rebuild and Transformer Additions	2022	2	T-D Interconnection	Planned	A in MTEP19	14906	۲	1,500,000.00
Central UP, new DIC	2022	2				15133	\$	
Eastern UP, new DIC	2023	2	T-D Interconnection	Proposed	A in MTEP18		\$	6,200,000.00
Winona - Atlantic 69kV (Winona69), rebuild		2	T-D Interconnection	Proposed	A in MTEP18	15130	\$	12,593,000.00
Keel Ridge SS, new DIC	2024	_	Reliability	Proposed	A in MTEP20	4727	Y	13,900,000.00
Marquette County Reactive Power Project	2025	2	T-D Interconnection	Proposed	A in MTEP18	13792	\$	2,600,000.00
, ,	2023	2	Reliability	Provisional	B in MTEP21	19965	\$	8,000,000.00
Munising Area Reactive Power Project	2023	2	Reliability	Provisional	B in MTEP21	19966	\$	5,000,000.00
Forsyth - Gwinn 69kV, new line	2024	2	Operational Flexibility	Provisional	B in MTEP20	18018	\$	4,000,000.00
Arnold SS, 80 MVAR Inductor Bank	2027	2	Reliability	Provisional	B in MTEP18	14187	\$	6,300,000.00
Blount - East Campus, 69kV, (6907), underground cable replacement	2020	3	Damage	Planned	A in MTEP20	18848	\$	9,000,000.00
Dam Heights SS, DIC and new radial line	2020	3	T-D Interconnection	Planned	A in MTEP18	15045	\$	4,200,000.00
Darlington SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19268	\$	202,295.00
Dodgeville SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19226	\$	220,000.00
Eden - Lands End 69kV, Loop into Highland SS	2021	3	G-T Interconnection	Planned	A in MTEP20	17525	\$	13,674,246.00
Eden - Highland (X-147) 138kV, uprate	2021	3	G-T Interconnection	Planned	A in MTEP20	19269	\$	695,243.00
Eden SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19246	\$	794,591.00
Elkhorn - North Lake Geneva (X-55) 138 kV, uprate	2021	3	G-T Interconnection	Planned	A in MTEP20	19245	\$	372,880.00
Falcon SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19268	\$	147,624.00
Highland - Spring Green (X-17) 138kV, Uprate	2021	3	G-T Interconnection	Planned	A in MTEP20	17525	\$	2,981,519.00
Hill Valley SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19246	\$	611,927.00
Hillman SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19248	\$	181,784.00
Hillman SS, Upgrade Transformer	2021	3	G-T Interconnection	Planned	A in MTEP20	19268	\$	3,132,719.00
J584 GIC Jordan SS, Generator Interconnection Facilities and Network Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP19	16493	Ś	6,200,858.00
J807 Falcon SS Generator Interconnection Facilities and Network Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	18566	Ś	870,186.00
J855 Ebenezer SS Generator Interconnection Facilities and Network Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	18665	\$	5,526,333.00
J947 Tennyson SS Generator Interconnection Facilities and Network Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19145	Ś	5,608,810.00
25	2021		G-1 interconnection	Fiaillieu	AIIIIVIIEFZU	13143	۲	3,000,010.00

	2020 Estimated In-Service			Planned / Proposed /	MISO MTEP Appendix (BOLD =	MTEP		
Project Name	Year	ZONE	Need Category	Provisional	Certified)	PRJID		Cost
Nelson Dewey SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19267	\$	537,753.00
North Monroe - Bass Creek (X-12) 138 kV, uprate	2021	3	G-T Interconnection	Planned	A in MTEP20	19268	\$	402,454.00
North Monroe SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19247	\$	199,855.00
Rock Branch SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19226	\$	220,000.00
Rock River SS, Bus Switch Upgrade	2021	3	G-T Interconnection	Planned	A in MTEP20	19268	\$	182,621.00
Spring Green SS Grounding System Upgrades	2021	3	G-T Interconnection	Planned	A in MTEP20	19269	\$	220,000.00
Cross Country SS, DIC, Install New Breakers	2021	3	T-D Interconnection	Planned	A in MTEP19	14906	\$	630,000.00
Milton Lawns SS, DIC add 2nd transformer and line breakers	2021	3	T-D Interconnection	Planned	A in MTEP18	15131	\$	3,000,000.00
Muscoda SS, DIC add 2nd transformer and substation rebuild	2021	3	T-D Interconnection	Planned	A in MTEP18	15124	\$	3,290,000.00
Northern Lights Substation, new T-D Interconnection	2021	3	T-D Interconnection	Planned	A in MTEP17	12346	\$	21,235,700.00
Orfordville SS, DIC, Capacitor Retirement and Transformer Replacement	2021	3	T-D Interconnection	Planned	A in MTEP19	14906	\$	182,000.00
Portage Industrial Park SS, DIC, replace transformers and substation rebuild	2021	3	T-D Interconnection	Planned	A in MTEP18	15127	\$	3,000,000.00
Waterloo SS, DIC, New 138kV Substation	2021	3	T-D Interconnection	Planned	A in MTEP19	14906	\$	3,600,000.00
Bass Creek - Town Line Road (X-95) 138kV, reconductor	2022	3	G-T Interconnection	Planned	A in MTEP20	19146	Ś	4,445,862.00
Bristol - Elkhorn (X-81) 138 kV, uprate	2022	3	G-T Interconnection	Planned	A in MTEP20	19146	Ś	790.866.00
Concord - Cooney (9042) 138kV, Reconductor	2022	3	G-T Interconnection	Planned	A in MTEP20	18925	\$	3,363,101.00
J818 Jefferson SS Generator Interconnection Facilities and Network Upgrades	2022	3	G-T Interconnection	Planned	A in MTEP20	18925	\$	1,669,458.00
J850 North Creek SS Generator Interconnection Facilities and Network Facilities	2022	3	G-T Interconnection	Planned	A in MTEP20	19146	\$	6,104,293.00
J864 Lone Rock SS Generator Interconnection Facilities and Network Upgrades	2022	3	G-T Interconnection	Planned	A in MTEP20	19225	Ś	1,767,400.00
North Lake Geneva Tap - Burlington SS (6541) 138 kV, uprate	2022	3	G-T Interconnection	Planned	A in MTEP20	19146	Ś	1.232.351.00
Green County, new DIC	2022	3	T-D Interconnection	Planned	A in MTEP18	15129	\$	4,000,000.00
J819 Darlington SS Generator Interconnection Facilities and Network Upgrades	2023	3	G-T Interconnection	Planned			Ś	1,655,059.00
Rock River SS (X-74) Terminal Upgrade	2023	3	G-T Interconnection	Planned			7	
South Monroe - Browntown (Y-155) 69kV, rebuild	2023	3	G-T Interconnection	Planned			\$	9,785,195.00
Cardinal - Hickory Creek 345kV, Line Construction	2023	3	Reliability, Economic and Policy	Planned	A in MTEP11	3127	\$	492,200,000.00
Barneveld SS, DIC, new substation	2023	3	T-D Interconnection	Planned	A in MTEP20	18052	\$	12,300,000.00
Portage - Columbia 138kV (X-13/X-20), rebuild existing double circuit	2024	3	Reliability	Planned	A in MTEP19	4730	\$	11,500,000.00
Gateway - Sycamore (6902), 69kV, rebuild	2023	3	Reliability	Proposed	A in MTEP21	14964	\$	2,900,000.00
South Beaver Dam - North Beaver Dam (Y-59), 69kV, uprate	2023	3	Reliability	Proposed	A in MTEP20	14909	Ś	70,000.00
West Middleton - Stagecoach 69kV (6927), Partial Rebuild	2023	3	Reliability	Proposed	A in MTEP20	12175	\$	2,735,023.00
Tokay SS, DIC, Add Transformer	2023	3	T-D Interconnection	Proposed	A in MTEP20	14907	\$	500,000.00
Spring Green - Wick Drive (Y-170), 69kV, uprate	2023	3	Reliability	Proposed	A in MTEP21	14964	Ś	1,500,000.00
Drumlin SS, DIC, New Substation	2023	3	T-D Interconnection	Provisional	A in MTEP21	19806	Ś	3,500,000.00
Nelson Dewey - Bloomington (Y-184), 69kV, rebuild & OPGW	2025	3	Reliability, Condition and Performance	Provisional	B in MTEP21	19962	\$	15,250,000.00
Gran Grae SS, Install a second 161/69kV transformer	2025	3	Reliability	Provisional			\$	8,200,000.00
Cardinal - Blount 138kV, construct	2031	3	Reliability	Provisional	B in MTEP21	1730	\$	109,000,000.00
Forest Junction SS, Relieve Market Congestion	2020	4	Economic	Planned	A in MTEP18	16164	\$	2,000,000.00
Edgewater - Erdmann 69kV (Y-31), rerate	2020	4	Reliability	Planned	A in MTEP18	13824	\$	2,350,000.00
Pulliam SS, Install redundant bus differential	2020	4	Reliability	Planned	A in MTEP18	13727	\$	1,900,000.00
30th Avenue SS, DIC, replace transformer	2020	4	T-D Interconnection	Planned	A in MTEP18	14905	\$	2,200,000.00
Kaukauna Utilities Combine Locks SS, DIC, replace transformer	2020	4	T-D Interconnection	Planned	A in MTEP18	14905	\$	232,000.00
Ogden St SS, Network Project: Ogden St - Bayshore 69kV Line Construction							_	
J505 GIC Apollo SS, Generator Interconnection and Network Facilities	2020	4	T-D Interconnection	Planned	A in MTEP15	4732	\$	17,100,000.00 8,300,000.00
20th Street SS, Install two 138kV 8.16 MVAR Capacitor Banks	2021		G-T Interconnection	Planned	A in MTEP18	14925	\$	
Huebner SS, Install two 138kV 8.16 MVAR Capacitor Banks	2021	4	Reliability	Planned	A in MTEP19	14908	\$	2,500,000.00
Ryan St SS, DIC, Retire Substation	2021	4	Reliability	Planned	A in MTEP19	14908	\$	2,400,000.00
Riverside SS, Bus Uprate	2021	4	T-D Interconnection	Planned	A in MTEP18	14904	\$	476,000.00
, ,	2022	4	Reliability	Planned	A in MTEP18	13832	\$	80,000.00
Bayridge SS, new T-D Interconnection Construct T-D Roosevelt Road Substation	2022	4	T-D Interconnection	Planned	A in MTEP16	10485	\$	2,122,335.00
	2022	4	T-D Interconnection	Planned	A in MTEP16	10686	\$	1,102,365.00
Henry St. SS, DIC, Retire Substation	2022	4	T-D Interconnection	Planned	A in MTEP20	14907	\$	96,000.00
Preble SS, DIC, add 4th transformer and substation rebuild	2022	4	T-D Interconnection	Planned	A in MTEP20	17628	\$	3,498,694.00
Stiles SS - West Marinette SS (M117/L142), OPGW Installation	2023	4	Communication	Planned	A in MTEP19	15936	\$	5,600,000.00

Draiget Name	2020 Estimated In-Service Year	ZONE	Need Cotemany	Planned / Proposed / Provisional	MISO MTEP Appendix (BOLD =	MTEP PRJID		Cont
Project Name Lost Dauphin - Red Maple 138kV (Q-147), uprate			Need Category		Certified)	-		Cost
Sheboygan County SS, DIC, substation rebuild	2023	4	Reliability	Planned	A in MTEP21	14964	\$	635,000.00
Eaton SS. new T-D Interconnection	2023	· ·	T-D Interconnection	Planned	A in MTEP20	18051		8,000,000.00
Edgewater SS, DIC, replace transformer and substation rebuild	2024	4	T-D Interconnection	Planned	A in MTEP16	10484	\$	2,500,000.00
East Krok - Beardsley, (EAKY11), 69kV, uprate	2024	4	T-D Interconnection	Planned	A in MTEP18	15126	\$	5,100,000.00
Howards Grove - Erdman 138kV, new line	2023	-	Reliability	Proposed	A in MTEP21	14964	Y	2,300,000.00
,	2023	4	Reliability	Proposed	A in MTEP20	18568	\$	25,000,000.00
12th Avenue SS, DIC, Transformer Replacement Wells St. DIC – new West Marinette-Wells St. 69 kV line	2023	4	T-D Interconnection	Proposed	A in MTEP20	14907	\$	1,778,000.00
	2023	4	T-D Interconnection	Provisional	A in MTEP21	19961	\$	14,500,000.00
Juneautown SS, new T-D Interconnection	2020	5	T-D Interconnection	Planned	A in MTEP18	13104	\$	33,884,000.00
Port Washington - Saukville 138kV (762), Rebuild to a double circuit	2021	5	Reliability	Planned	A in MTEP16	9986	\$	21,000,000.00
Arcadian SS, Construct T-D	2021	5	T-D Interconnection	Planned	A in MTEP17	13067	\$	514,000.00
River Bend SS, Add 2nd Transformer	2021	5	T-D Interconnection	Planned	A in MTEP19	14906	\$	717,000.00
Tamarack SS, DIC, Replace Transformer	2021	5	T-D Interconnection	Planned	A in MTEP19	14906	\$	2,000,000.00
Berryville SS Grounding System Upgrades	2022	5	G-T Interconnection	Planned	A in MTEP20	18985	\$	328,807.00
Elkhorn SS Grounding System Upgrades	2022	5	G-T Interconnection	Planned	A in MTEP20	18985	\$	223,683.00
J850/J878 East Paris SS, new 345/138kV transformer	2022	5	G-T Interconnection	Planned	A in MTEP20	18985	\$	24,972,611.00
J878 Paris SS Generator Interconnection Facilities and Network Upgrades	2022	5	G-T Interconnection	Planned	A in MTEP20	19265	\$	1,973,438.00
Paris SS Grounding System Upgrades	2022	5	G-T Interconnection	Planned	A in MTEP20	19265	\$	380,402.00
Arcadian SS, Power Transformer and Control House Replacement and Asset Renewal	2023	5	Condition and Performance / Reliability	Planned	A in MTEP20	16486	\$	40,000,000.00
Granville SS, Control House and Relay Replacement and Asset Renewal	2024	5	Condition and Performance / Reliability	Proposed	A in MTEP21	16490	\$	28,949,044.00
Germantown SS DIC, Install additional transformer	2022	5	T-D Interconnection	Provisional	A in MTEP20	14907	\$	6,000,000.00
Sussex to Bark River (46143/2661), 138kV, OPGW Installation	2023	5	Communication	Provisional	B in MTEP21	19959	\$	4,250,000.00
Communication Reliability Upgrades Current Cycle	2021	various	Communication	Planned	A in MTEP18	13823	\$	34,461,836.00
Line Clearance Mitigation Project Current Cycle	2021	various	Line Clearance	Planned	A in MTEP18	13824	\$	18,718,669.00
Physical Security Current Cycle	2021	various	Physical Security	Planned	A in MTEP18	13826	\$	67,198,396.00
Distribution Interconnection Current Cycle	2021	various	T-D Interconnection	Planned	A in MTEP18	14904	Ś	6,436,258.00
Communication Reliability Upgrades 2019	2022	various	Communication	Planned	A in MTEP18	13829	Ś	1,422,500.00
Line Clearance Mitigation Project 2019	2022	various	Line Clearance	Planned	A in MTEP18	13825	Ś	5,832,204.00
Physical Security 2019	2022	various	Physical Security	Planned	A in MTEP18	13828	Ś	3,000,000.00
Distribution Interconnection 2019	2022	various	T-D Interconnection	Planned	A in MTEP18	14905	Ś	10,570,000.00
Communication Reliability Upgrades 2020	2023	various	Communication	Planned	A in MTEP19	14910	Ś	11,344,615.00
Line Clearance Mitigation Project 2020	2023	various	Line Clearance	Planned	A in MTEP19	14912	Ś	12.062.247.00
Physical Security 2020	2023	various	Physical Security	Planned	A in MTEP19	14914	Ś	21,603,965.00
Load Interconnection 2020	2023	various	T-D Interconnection	Planned	A in MTEP19	14906	Ś	26,774,954.00
Communication Reliability Upgrades 2021	2024	various	Communication	Planned	A in MTEP20	14911	Ś	10,927,208.00
Line Clearance Mitigation Project 2021	2024	various	Line Clearance	Planned	A in MTEP20	14913	Ś	3,791,502.00
Physical Security 2021	2024	various	Physical Security	Planned	A in MTEP20	14915	Ś	17,908,909.00
Load Interconnection 2021	2024	various	T-D Interconnection	Planned	A in MTEP20	14913	\$	20,124,594.00
Communication Reliability Upgrades 2022	2024	various	Communication	Proposed	A in MTEP21	14965	\$	8,500,000.00
Line Clearance Mitigation Project 2022	2025	various	Line Clearance	Proposed	A in MTEP21	14965	\$	7,500,000.00
Physical Security 2022	2025	l		<u> </u>		14966	\$	15,000,000.00
Load Interconnection 2022		various	Physical Security	Proposed	A in MTEP21		\$	
Load Interconnection 2022	2025	various	T-D Interconnection	Proposed	A in MTEP21	14968	>	32,500,000.00

COMMONLY USED DEFINITIONS

DIC - Distribution Interconnection
GIA - Generator Interconnection Agreement
GIA - Generator Interconnection Agreement

MISO MTEP Appendix - Indicates MTEP Cycle, Cycles MTEP19 and prior are Certified in MISOs' Regional Plan for A projects (**BOLDED**), MTEP20 and future cycles are not yet certified at the time of publication (9/2020).