ATC Futures - ATC Energy Collaborative - Michigan

		February 8, 2010 (Stakeholder Comment Draft) (High Retirement Version 2(Rev 1.0)																							
	Load Assumptions Generation Assumptions																								
<u>UP Micro-</u> <u>Drivers</u>		Demand Growth																				New Generation in			
Drivers	Demand Growth Within UP (Demand Energy MWs)		Energy G	Energy Growth Within UP (Energy MWHrs)						Outside UP (MWs)	Existing LIP Conor	ation Profile (Changes in Disnat	Profile (Changes in Dispatch Characteristics)		IIP Gono	ation Additions	IIP Con	neration retiremen	Wind Generation			Northern Lower Michigan			
Bounds	West	Central	East	West	Central	East	West	Central	East	U.P.	U.P.	(11113)	West	Central	East	West	Central	East	West	Central	East	West	Central		michigan
							(-14/0)							Fossil (-511)											
							(-14/0)							F055ii (-511)											
Very Low							-14 MW							Hydro 20% of max											
very Low							14 10100							Tiyaro 2070 or max											
							(-6 / 0)	(-111 / 0)	(-2 / 0)				Fossil (-69 MW)	Fossil (-151 MW)	9.4MW Diesel Available			5 MW		116 MW					
Lower	-0.10%	0.08%	0.10%	-0.10%	0.08%	0.10%	-6 MW	-111 MW	-2 MW	-1.44%	-0.86%	0.5%	Hydro 20% of max	Hydro 20% of max	Hydro Off Line (0MW)	None	None		None		None	Zero	Zero	Zero	Zero
								(-40 / 0)					Fossil (-51MW)	Fossil (-134)											
Mid-Lower	0.36%	0.48%	0.40%	0.36%	0.48%	0.40%	No Change	-40 MW	No Change	-0.24%	-0.05%	1.0%	Hydro 20% of max	Hydro 20% of max											
							(+5 / 0)	(+29 / 0)	(+33 / 0)				Fossil (-40MW)	Fossil (-65 MW)	11.4MW Diesel Available		10MW	29 MW							
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					1																				
Mid	0.73%	0.84%	0.75%	0.73%	0.84%	0.75%	+5 MW	+29 MW	+33 MW	1.14%	0.84%	1.75%	Hydro 40% of max	Hydro 40% of max,	20MW Hydro	None			None		None	25MW	50MW	50MW	100MW
							(+16 / +3)	(+79 / +20)	(+35 / +5)				Fossil all available	Fossil (-40 MW)	11.4MW Diesel Available		35MW	93MW							
							(+107+3)	(+757+20)	(+357+3)				i ossii ali avaliable	1 03311 (-40 IVIVV)	11.4WW Diesel Available		JJIVIVV	SOWIVV							
					1																				
Mid-Upper	1.23%	1.25%	1.25%	1.23%	1.25%	1.25%	+19 MW	+99 MW	+40 MW	2.00%	1.60%	2.0%	Hydro 50% of max	Hydro 50% of max	32MW Hydro				None			50MW	100MW	100MW	
							(+19 / +22)	(+134 /+50)	(+46 / +10)				Fossil all available	Fossil all available	Diesel 100% Available (16MW)		50MW	101 MW		138 MW					
							(1.137.1==)	(,	(**************************************																
Upper	1.93%	2.00%	2.00%	1.93%	2.00%	2.00%	+41 MW	+184 MW	+56 MW	3.00%	2.58%	3.0%	Hydro 60% of max	Hydro 60% of max	Hydro 100% (44MW)	None			None		None	100MW	200MW	200MW	600MW
2018 Futures																									
<u>Descriptions</u>	(: 4.000()	(.0.000()	(-0.000()	(-1.000()	(.0.000()	(.0.000()	(:40 1040	(:404.14040	(. 40 MM)	(.0.000()			F 9 . 11 9 . 1	For Yoll and Yolds	COMPANIA	140	(-401040	(:404 1000		(440,100		(-05 1010	(.50 1010	(50 MM)	
	(+1.93%)	(+2.00%)	(+2.00%)	(+1.93%)	(+2.00%)	(+2.00%)	(+19 MVV)	(+134 MW)	(+46 MW)	(+3.00%)			Fossil all available	Fossil all available	20MW Hydro	W) Mid-	(+10MW)	(+101 MW)	(none)	(-116 MW)	(none)	(+25 MW)	(+50 MW)	(+50 MW)	
Robust Economy	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper		Upper 3%	Upper	Upper	Mid	Upper	Upper	Upper	Lower	Lower	Lower	Mid	Mid	Mid	Upper 600MW
	(+0.73%)	(+0.84%)	(+0.75%)	(+0.73%)	(+0.84%)	(+0.75%)	(+5 MW)	(+29 MW)	(+33 MW)	(+1.14%)			(-69 MW)	Fossil (-151 MW)	32MW Hydro	(none)	(none)	(+29 MW)	(none)	(-138 MW)	(none)	(+25 MW)	(+50 MW)	(+50 MW)	
High Retirements	Mid	Mid	Mid	Mid	Mid	Mid	Mid	Mid	Mid	Mid		Mid 1.75%	Lower	Lower	Mid-Upper	Lower	Lower	Mid	Lower	Upper	Lower	Mid	Mid	Mid	Upper 600MW
	(+0.73%)	(+0.84%)	(+0.75%)	(+0.73%)	(+0.84%)	(+0.75%)	(-14 MW)	(+64 MW)	(+3 MW)	(+0.94%)			(-69 MW)	Fossil (-511 MW)	20MW Hydro	(none)	(none)	(+5 MW)	(none)	(-138 MW)	(none)	(+25 MW)	None	(+50 MW)	
High Retirements (Version 2)	Mid	Mid	Mid	Mid	Mid	Mid	Very Low	Mid	Mid Lower	Mid		Mid 1.75%	Lower	Very Low	Mid	Lower	Lower	Mid	Lower	Upper	Lower	Mid	Lower	Mid	Upper 600MW
(· · · · · /	(+0.36%)	(+0.48%)	(+0.40%)	(+0.36%)	(+0.48%)	(+0.40%)	(no change)		(no change)	(-0.24%)			Fossil (-51MW)	Fossil (-134)	20MW Hydro	(none)	(none)	(+5 MW)	(none)	(-116 MW)	(none)		(+100 MW)		-,,,
High Facinessands	Mid Laura	Mid Laura	Mid Laures	Mid Laura	Mid Laures	Mid Laws	Mid Laures	Midlame	Mid Laura	Mid Laura		Mid I 40/	Mid Laura	Mid Laura	Mid		1	1		1	1	Mid Hann	Mid Hanna	Mid Hanna	1 0
High Environmental	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower		Mid-Lower 1%	Mid-Lower	Mid-Lower	Mid	Lower	Lower	Lower	Lower	Lower	Lower	Mid-Upper	Mid-Upper	Mid-Upper	Lower 0
	(-0.10%)	(+0.08%)	(+0.10%)	(-0.10%)	(+0.08%)	(+0.10%)	(-6 MW)	(-111 MW)	(-2 MW)	(-1.44%)			Fossil (-40MW)	Fossil (-65 MW)	Hydro 100% (44MW)	(none)	(+10MW)	(+5 MW)	(none)	(-116MW)	(none)	(+100MW)	(+200MW)	(+200MW)	
																					' '				
Slow Growth	Lower (+1.23%)	Lower (+1.25%)	Lower (+1.25%)	Lower (+1.23%)	Lower (+1.25%)	Lower (+1.25%)	(+16 MW)	Lower (+79 MW)	Lower (+35 MW)	Lower (+2.00%)		Lower 0.5%	Mid (-69 MW)	Mid Fossil (-151 MW)	Upper 20MW Hydro	Mid (none)	Mid (none)	Lower (+93 MW)	Lower (none)	Lower (-138 MW)	Lower (none)	(+100 MW)	(+200 MW)	Upper (+200 MW)	Lower 0
													(==:///	(.0)		(5110)	(5.1.0)		()		(5110)		(.233)	(-200)	
DOE 20% Wind	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper		Mid-Upper 2%	Lower	Lower	Mid	Lower	Lower	Mid-Upper	Lower	Upper	Lower	Upper	Upper	Upper	Mid 100MW
	(+0.73%)	(+0.84%)	(+0.75%)	(+0.73%)	(+0.84%)	(+0.75%)	(no change)	(+6MW)	(no change)	(0.48%)			Fossil (-40MW)	Fossil (-65 MW)	Hydro Off Line (0MW)	(none)	(+10MW)	(+5 MW)	(none)	(-116 MW)	(none)	(none)	(none)	(none)	
Fuel and Investment																									
Limitations	Mid	Mid	Mid	Mid	Mid	Mid	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower		Mid-Lower 1.3%	Mid	Mid	Lower	Mid	Mid	Lower	Lower	Lower	Lower	Lower	Lower	Lower	Lower 0
2024 Futures																									
<u>Descriptions</u>																									
	(+1.93%)	(+2.00%)	(+2.00%)	(+1.93%)	(+2.00%)	(+2.00%)	(+41 MW)	(+184 MW)	(+56 MW)		(+2.58%)		Fossil all available	Fossil all available	20MW Hydro	W)	(+10MW)	(+101 MW)	(none)	(-116 MW)	(none)	(+25 MW)	(+50 MW)	(+50 MW)	
Robust Economy	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper		Upper	Upper 3%	Upper	Upper	Mid	Upper	Upper	Upper	Lower	Lower	Lower	Mid	Mid	Mid	Upper 600MW
	(+0.73%)	(+0.84%)	(+0.75%)	(+0.73%)	(+0.84%)	(+0.75%)	(+5 MW)	(+29 MW)	(+33 MW)		(+0.84%)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(-69 MW)	Fossil (-151 MW)	32MW Hydro	(none)	(none)	(+29 MW)	(none)	(-138 MW)		(+25 MW)		(+50 MW)	-11 2. 000.001
High Retirements	Mid	Mid	Mid	Mid	Mid	Mid	Mid	Mid	Mid		Mid	Mid 1.75%	Lower	Lower	Mid-Upper	Lower	Lower	Mid	Lower	Upper	Lower	Mid	Mid	Mid	Upper 600MW
- ign remements	(+0.73%)	(+0.84%)	(+0.75%)	(+0.73%)	(+0.84%)	(+0.75%)	(-14 MW)	(+64 MW)	(+3 MW)		(+0.72%)	IVIIG 1.7376	(-69 MW)	Fossil (-511 MW)	20MW Hydro	(none)	(none)	(+5 MW)	(none)	(-138 MW)		(+25 MW)		(+50 MW)	Oppor oddivivv
High Retirements												N. 1													
(Version 2)	Mid (+0.36%)	Mid (+0.48%)	Mid (+0.40%)	Mid (+0.36%)	Mid (+0.48%)	Mid (+0.40%)	(no change)	Mid (-40 MW)	Mid Lower (no change)		Mid (-0.05%)	Mid 1.75%	Lower Fossil (-51MW)	Very Low Fossil (-134)	Mid 20MW Hydro	Lower (none)	Lower (none)	Mid (+5 MW)	Lower (none)	Upper (-116 MW)	Lower (none)	Mid (+50 MW)	(+100 MW)	Mid (+100 MW)	Upper 600MW
	(10.0070)	(10.4070)	(10.4070)	(10.0070)	(10.4070)	(10.4070)	(no change)	(40 IVIVV)	(110 Griarige)		(0.0076)		1 03311 (0119199)	1 030ii (~104)	ZOWYY TIYUIO	(Horie)	(Horie)	(10 IVIVV)	(Holle)	(1.13 WWV)	(HOHE)	(100 10100)	(1100 10100)	(1100 WW)	
High Environmental	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower	Mid-Lower		Mid-Lower	Mid-Low 1%	Mid-Lower	Mid-Lower	Mid	Lower	Lower	Lower	Lower	Lower	Lower	Mid-Upper	Mid-Upper	Mid-Upper	Lower 0
	(-0.10%)	(+0.08%)	(+0.10%)	(-0.10%)	(+0.08%)	(+0.10%)	(-6 MW)	(-111 MW)	(-2 MW)		(-0.86%)		Fossil (-40MW)	Fossil (-65 MW)	Hydro 100% (44MW)	(none)	(+10MW)	(+5 MW)	(none)	(-116MW)	(none)	(+100MW)	(+200MW)	(+200MW)	
	(0.1070)		(10.1070)	(0.1070)	(. 5.0070)	(.3.1070)	(5 14147)	((2 ////)						1.190.0 100/0 (441010)				()	(()	((12301414)	(12001111)	
Slow Growth	Lower	Lower	Lower	Lower	Lower	Lower	Lower	Lower	Lower		Lower	Lower 0.5%	Mid	Mid Facil (454 MM)	Upper	Mid	Mid	Lower	Lower	Lower	Lower	Upper	Upper	Upper	Lower 0
	(+1.23%)	(+1.25%)	(+1.25%)	(+1.23%)	(+1.25%)	(+1.25%)	(+19 MW)	(+99 MW)	(+40 MW)		(+1.60%)		(-69 MW)	Fossil (-151 MW)	20MW Hydro	(none)	(none)	(+93 MW)	(none)	(-138 MW)	(none)	(+100 MW)	(+200 MW)	(+200 MW)	
DOE 20% Wind	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper	Mid-Upper		Mid-Upper	Mid-Upper 2%	Lower	Lower	Mid	Lower	Lower	Mid-Upper	Lower	Upper	Lower	Upper	Upper	Upper	Mid 100MW
										-					11.10"										
Fuel and Investment	(+0.73%)	(+0.84%)	(+0.75%)	(+0.73%)	(+0.84%)	(+0.75%)	(no change)	(+6MW)	(no change)		(0.45%)		Fossil (-40MW)	Fossil (-65 MW)	Hydro Off Line (0MW)	(none)	(+10MW)	(+5 MW)	(none)	(-116 MW)	(none)	(none)	(none)	(none)	
Limitations	Mid	Mid	Mid	Mid	Mid	Mid	Mid-Lower	Mid-Lower	Mid-Lower		Mid-Lower	Mid-Lower 1.3%	Mid	Mid	Lower	Mid	Mid	Lower	Lower	Lower	Lower	Lower	Lower	Lower	Lower 0
				-		-								-											