



Ore Name	Height	Amount	OW	Nether	TF	End	End A.	Moon	Deimos	Mars	Phobos	Asteroids	Callisto	Ceres	Europa	Ganymede	Io	Mercury	Venus	Enceladus	Miranda	Oberon	Titan	Proteus	Triton	Haumea	Kuiper Belt	Makemake	Pluto	A Centauri Bb	Barnard C	Barnard E	Barnard F	T Cell E	Vega B				
Diamond	5-15	2	X						X			X	X	X					X				X	X												X			
Redstone	5-25	8	X	X						X							X	X	X					X	X														
Lapis	10-50	4	X														X	X																			X		
Gold	20-60	8	X			X	X			X	X	X	X	X					X								X										X		
Silver	20-60	20	X	X		X	X										X				X	X		X	X	X											X		
Iron	40-100	16	X	X		X	X			X	X	X	X	X			X	X			X	X		X	X	X	X										X		
Nickel	80-150	8	X	X		X	X			X	X	X	X	X					X	X		X	X		X	X	X										X		
Copper	60-180	32	X	X		X	X			X	X	X	X	X					X	X		X	X		X	X	X										X		
Zinc	80-210	24	X	X		X	X			X	X	X	X	X					X	X		X	X		X	X	X										X		
Tin	80-220	32	X	X		X	X			X	X	X	X	X					X	X		X	X		X	X	X										X		
Coal	120-250	24	X																																				
Sulfur	5-60	40	X														X		X																				
Quartz	5-115	16	X																																				
Saltpeter	10-60	8	X	X					X	X							X	X		X					X														
Realgar	15-85	32	X																																			X	
Nether Quartz	30-120	64	X																																				
Lead	40-180	16	X	X		X	X			X	X	X	X	X			X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Bismuth	80-120	8	X						X			X	X	X			X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Amber	5-35	2	X																																				
Amethyst	5-35	2	X																																				
Blue Topaz	5-35	2	X																																				
Emerald	5-35	2	X																																				
Green Sapphire	5-35	2	X																																				
Jade	5-35	2	X																																				
Jasper	5-35	2	X																																				
Olivine	5-35	2	X																																				
Opal	5-35	2	X																																				
Red Garnet	5-35	2	X																																				
Ruby	5-35	2	X																																				
Ruby (Fake)	5-35	2	X																																				
Tanzanite	5-35	2	X																																				
Topaz	5-35	2	X																																				
Sapphire	5-35	2	X																																				
Yellow Garnet	5-35	2	X																																				
Meteoritic Iron	50-70	8						X	X	X	X						X		X																			X	
Draconium	5-15	4						X	X	X	X						X		X																				X
Desh	10-30	6						X	X	X	X						X		X																				X
Titanium	10-180	32						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Chromite	20-40	8						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Tungstate	20-40	8						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Olimarikon	20-40	6						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Naquadah	5-25	8						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Quantium	5-25	6						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Myrryl	5-25	6						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Ledox	40-60	4						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Firestone	5-15	2						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Deep Iron	5-40	8						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Tungsten	10-120	16						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Neutronium	5-15	8						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Black Plutonium	25-45	6						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Awakened Draconium	5-15	2						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Bedrockium	5-25	6						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Infinity Catalyst	40-80	6						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Highlights above are what dim/planet tier you first encounter the small ore  
Rocket T1 is the moon, color changes after that indicate rocket tier+1  
Europa, Centauri Bb, Barnard C have none  
Other dimensions probably have none

GregTech Tier	Mod Tier	Metal	Rocket/Planet Tier	Mod-Start	Thaumcraft tier	Blood Magic Tier
Pre-Steam	0	Stone / Flint	0	Vanilla, Pam's Harvestcraft, Tinkers, Railcraft		
Steam	1	Bronze	0	Gregtech		
LV	2	Steel	0	Steve's Carts, Extra Utilites		
MV	3	Aluminum	0	Ender IO, Witchery	Tier 1 (Stick)	1
HV	4	Stainless Steel	1	Ender IO finishes, SFM, Witchery finishes	Tier 2 (Greatwood)	2
EV	5	Titanium	2	GT++ ABS, AE2, NanoChestPlate	Tier 3 (Elemental)	3
IV	6	Tungstensteel	3, 4	EnderStorage	Tier 4 (Warpwood)	4
LuV	7	Rhodium-Plated Palladium	5		Tier 5 (Ichor/Kami)	5
ZPM	8	Iridium	6	GraviChestPlate		6
UV	9	Osmium	7	Gendustry		
UHV	10	Neutronium	8	Draconic Evolution		
UEV	11	Bedrockium				
UIV	12	Black Plutonium				
UMV	13	Draconium				
UXV	14	No recipe				
OpV	15	No recipe				
MAX	16	No recipe				
Tiers UIV+ aren't really used right now						

Other Useful Sheets:

### GTNH : Best Biome for IC2 crop

Uses info from the biome sheet to show you what are the best biomes for IC2 crops

<https://docs.google.com/spreadsheets/d/1kEsvYIUZTw8oY5gu1NSB9B-KUZBqhpIC1xb2TWjZvoY/edit#gid=1059242842>

### Cracked Fuels

Lists results of most cracking DT recipes, Bee Planet dusts and their results, and some rocket info

[https://docs.google.com/spreadsheets/d/1f1qKryaKXYWTKu6p\\_45zYcdSjXyZabJ1QfzPBmC7a\\_/edit#gid=0](https://docs.google.com/spreadsheets/d/1f1qKryaKXYWTKu6p_45zYcdSjXyZabJ1QfzPBmC7a_/edit#gid=0)

### Large Turbine Calculator

Make a copy, and then change the variables. Check the GT Turbine Stats sheet to see what kinds of turbines there are

[https://docs.google.com/spreadsheets/d/1bNX3uDuWW5C\\_e1KWUFLdDhqlYdl73c2oAhh901u7M0/edit#gid=655714366](https://docs.google.com/spreadsheets/d/1bNX3uDuWW5C_e1KWUFLdDhqlYdl73c2oAhh901u7M0/edit#gid=655714366)

### GTNH Aspects

Follow the instructions to make your own copy, then sort to find out what has the essentia you want. Try removing items that have none to filter them out.

<https://docs.google.com/spreadsheets/d/1s0jNPH-MVP4LKIP1fBZto-JCqcbel.SmDoCQBft4wKfA/edit#gid=267860337>

### Platinum Chart (may not be 100% accurate)

<https://github.com/GTNewHorizons/NewHorizons/issues/4976>

### Cleanroom Calculator

[https://docs.google.com/spreadsheets/d/18illmJdGN6o6NcrVr2F\\_1xYepNrqj5NmdosAqYKAbA/edit#gid=1830446114](https://docs.google.com/spreadsheets/d/18illmJdGN6o6NcrVr2F_1xYepNrqj5NmdosAqYKAbA/edit#gid=1830446114)

### GTNH 2.0.9.0 Ore Byproducts

<https://docs.google.com/spreadsheets/d/1UH7wues7WKA18VICFK2v4zYlahKAeNyrY8y03azSpHE/edit#gid=0>

### Power Distribution Diagram

We use the 'Moron' version (maybe, not guaranteed), which should balance power distribution better than the older system. Numbers are the order in which the machines get power

<https://docs.google.com/spreadsheets/d/1A6gnzL3cJtsc89jN5BEMl41NakvN7Pq6IN1MlveFg/edit#gid=0>

### GregTech New Horizons – Complete bee list

Has useful bee info

[https://docs.google.com/spreadsheets/d/1NREhJwEGRUK5W1wUSDNrkGG2AkFsbIUZF9\\_PjtzPZ4/edit#gid=1525351597](https://docs.google.com/spreadsheets/d/1NREhJwEGRUK5W1wUSDNrkGG2AkFsbIUZF9_PjtzPZ4/edit#gid=1525351597)

Discord Links:

GT New Horizons (main discord for GTNH): <https://discord.gg/EXshrPV>

Bart's Stuff (Bartworks discord): <https://discord.gg/JvhQD6>

GT++ (GT++ discord): <https://discord.gg/YdXJbgb>

TecTech (TecTech discord): <https://discord.gg/aFurAxd>

Magic Solars Info:

Aer: If you're at Y 220 (I think?), you get a 3x multiplier or 1x multiplier at Y 5. If you're between those two Y values, you'll get 1.5x for example (requires daylight)

Terra: Works exactly the same as Aer, except opposite for Y 5 being the best and Y 220 being the worst (requires daylight)

Aqua: While under water, you get a 2x multiplier. While raining, you get a 3x multiplier. While in a thunderstorm, you get a 6x multiplier (all but the thunderstorm events requires daylight)

Ignis: While under lava, you get a 2x multiplier (requires daylight). While in the Nether biome or being fed ignis CVs, you get a 3x multiplier (I haven't checked this solar out so more info is needed)

Ordo: You get a 2x multiplier during the day but only produce a fraction of the EU during the night

Perditio: You get a 2x multiplier during the night but only produce a fraction of the EU during the day

Cables	Material	Voltage Tier	Max Amps	Loss	Wires	Material	Voltage Tier	Max Amps	Loss	Loss is per block per amp
	Red Alloy	8 (ULV)	1/2/4/8/12/16	0		Red Alloy	8 (ULV)	1/2/4/8/12/16	1	Wires other than (finished) superconductors and Graphene hurt to walk on when in use
	Cobalt	32 (LV)	2/4/8/16/24/32	2		Cobalt	32 (LV)	2/4/8/16/24/32	4	
	Lead	32 (LV)	2/4/8/16/24/32	2		Lead	32 (LV)	2/4/8/16/24/32	4	
	Soldering Alloy	32 (LV)	1/2/4/8/12/16	1		Soldering Alloy	32 (LV)	1/2/4/8/12/16	2	Voltage Tier
	Tin	32 (LV)	1/2/4/8/12/16	1		Tin	32 (LV)	1/2/4/8/12/16	2	8 ULV
	Zinc	32 (LV)	1/2/4/8/12/16	1		Zinc	32 (LV)	1/2/4/8/12/16	2	32 LV
	Redstone Alloy	32 (LV)	1/2/4/8/12/16	0		Redstone Alloy	32 (LV)	1/2/4/8/12/16	2	128 MV
	Cupronickel	128 (MV)	2/4/8/16/24/32	3		Cupronickel	128 (MV)	2/4/8/16/24/32	6	512 HV
	Iron	128 (MV)	2/4/8/16/24/32	3		Iron	128 (MV)	2/4/8/16/24/32	6	2048 EV
	Nickel	128 (MV)	3/6/12/24/36/48	3		Nickel	128 (MV)	3/6/12/24/36/48	6	8192 IV
	Copper	128 (MV)	1/2/4/8/12/16	2		Copper	128 (MV)	1/2/4/8/12/16	4	32,768 LuV
	Annealed Copper	128 (MV)	1/2/4/8/12/16	1		Annealed Copper	128 (MV)	1/2/4/8/12/16	2	131,072 ZPM
	SC Base MV	128 (MV)	1/2/4/8/12/16	1		SC Base MV	128 (MV)	1/2/4/8/12/16	2	524,288 UV
						SC MV	128 (MV)	2/4/8/16/24/32	0	2,097,152 UHV
	Kanthal	512 (HV)	4/8/16/32/48/64	3		Kanthal	512 (HV)	4/8/16/32/48/64	6	8,388,608 UEV
	Electrum	512 (HV)	2/4/8/16/24/32	2		Electrum	512 (HV)	2/4/8/16/24/32	4	33,554,432 UIV
	Gold	512 (HV)	3/6/12/24/36/48	2		Gold	512 (HV)	3/6/12/24/36/48	4	134,217,728 UMV
	Silver	512 (HV)	1/2/4/8/12/16	1		Silver	512 (HV)	1/2/4/8/12/16	2	536,870,912 UXV
	Blue Alloy	512 (HV)	2/4/8/16/24/32	1		Blue Alloy	512 (HV)	2/4/8/16/24/32	2	1,073,741,824 OpV
	SC Base HV	512 (HV)	1/2/4/8/12/16	1		SC Base HV	512 (HV)	1/2/4/8/12/16	2	2,147,483,640 MAX
						SC HV	512 (HV)	2/4/8/16/24/32	0	
	Nichrome	2048 (EV)	3/6/12/24/36/48	4		Nichrome	2048 (EV)	3/6/12/24/36/48	8	
	Steel	2048 (EV)	2/4/8/16/24/32	2		Steel	2048 (EV)	2/4/8/16/24/32	4	
	Black Steel	2048 (EV)	3/6/12/24/36/48	2		Black Steel	2048 (EV)	3/6/12/24/36/48	4	
	Titanium	2048 (EV)	4/8/16/32/48/64	2		Titanium	2048 (EV)	4/8/16/32/48/64	4	
	Aluminium	2048 (EV)	1/2/4/8/12/16	1		Aluminium	2048 (EV)	1/2/4/8/12/16	2	
	SC Base EV	2048 (EV)	2/4/8/16/24/32	1		SC Base EV	2048 (EV)	2/4/8/16/24/32	2	
						SC EV	2048 (EV)	4/8/16/32/48/64	0	
	Osmium	8192 (IV)	4/8/16/32/48/64	2		Osmium	8192 (IV)	4/8/16/32/48/64	4	
	Tungstensteel	8192 (IV)	3/6/12/24/36/48	2		Tungstensteel	8192 (IV)	3/6/12/24/36/48	4	
	Tungsten	8192 (IV)	2/4/8/16/24/32	2		Tungsten	8192 (IV)	2/4/8/16/24/32	4	
						Graphene	8192 (IV)	1/2/4/8/12/16	2	
	Platinum	8192 (IV)	2/4/8/16/24/32	1		Platinum	8192 (IV)	2/4/8/16/24/32	2	
	SC Base IV	8192 (IV)	2/4/8/16/24/32	1		SC Base IV	8192 (IV)	2/4/8/16/24/32	2	
						SC IV	8192 (IV)	4/8/16/32/48/64	0	
	Yttrium Barium Cuprate	32768 (LuV)	4/8/16/32/48/64	4		Yttrium Barium Cuprate	32768 (LuV)	4/8/16/32/48/64	8	
	HSS-G	32768 (LuV)	4/8/16/32/48/64	2		HSS-G	32768 (LuV)	4/8/16/32/48/64	4	
	Niobium-Titanium	32768 (LuV)	4/8/16/32/48/64	2		Niobium-Titanium	32768 (LuV)	4/8/16/32/48/64	4	
	Vanadium-Gallium	32768 (LuV)	4/8/16/32/48/64	2		Vanadium-Gallium	32768 (LuV)	4/8/16/32/48/64	4	
	SC Base LuV	32768 (LuV)	4/8/16/32/48/64	2		SC Base LuV	32768 (LuV)	4/8/16/32/48/64	2	
						SC LuV	32768 (LuV)	8/16/32/64/96/128	0	
	Trinium	131072 (ZPM)	6/12/24/48/72/96	4		Trinium	131072 (ZPM)	6/12/24/48/72/96	8	
	Naquadah	131072 (ZPM)	2/4/8/16/24/32	2		Naquadah	131072 (ZPM)	2/4/8/16/24/32	4	
	SC Base ZPM	131072 (ZPM)	4/8/16/32/48/64	2		SC Base ZPM	131072 (ZPM)	4/8/16/32/48/64	2	
						SC ZPM	131072 (ZPM)	8/16/32/64/96/128	0	
	Duranium	524288 (UV)	1/2/4/8/12/16	8		Duranium	524288 (UV)	1/2/4/8/12/16	16	
	Naquadah Alloy	524288 (UV)	2/4/8/16/24/32	4		Naquadah Alloy	524288 (UV)	2/4/8/16/24/32	8	
	Fluxed Electrum	524288 (UV)	3/6/12/24/36/48	1		Fluxed Electrum	524288 (UV)	3/6/12/24/36/48	2	
	SC Base UV	524288 (UV)	8/16/32/64/96/128	2		SC Base UV	524288 (UV)	8/16/32/64/96/128	2	
						SC UV	524288 (UV)	16/32/64/128/192/256	0	
	HSS-S	2097152 (UHV)	6/12/24/48/72/96	4		HSS-S	2097152 (UHV)	6/12/24/48/72/96	8	
						Ichorium	2097152 (UHV)	12/24/48/96/144/192	2	
	Bedrockium	2097152 (UHV)	2/4/8/16/24/32	1		Bedrockium	2097152 (UHV)	2/4/8/16/24/32	32	
	SC Base UHV	2097152 (UHV)	12/24/48/96/144/192	2		SC Base UHV	2097152 (UHV)	12/24/48/96/144/192	2	
						SC UHV	2097152 (UHV)	16/32/64/128/192/256	0	
	Draconium	8388608 (UEV)	8/16/32/64/96/128	4		Draconium	8388608 (UEV)	8/16/32/64/96/128	32	
	Nether Star	33554432 (UIV)	4/8/16/32/48/64	4		Nether Star	33554432 (UIV)	4/8/16/32/48/64	16	
						Quantium	134217728 (UMV)	2/4/8/16/24/32	16	
						Black Plutonium	536870912 (UXV)	1/2/4/8/12/16	16	
						Awakened Draconium	1073741824 (OpV)	1/2/4/8/12/16	16	
						Infinity	2147483640 (MAX)	8192/16384/32768/65536	1	

Mod	Material	Heat Limit	Tiny	Small	Normal	Large	Huge	Quadruple	Nonuple		Material	Tiny	Small	Normal	Large	Huge
GT++	Trinium Naquadah Carbonite	250,000 K	40	80	120	160	200	n/a	n/a		Tin	0.125	0.25	0.5	1	2
GT	Copper	1,000 K	60	120	400	800	1,600	400	120		Brass	0.25	0.5	1	2	4
GT	Wood	350 K	n/a	200	600	1,200	n/a	n/a	n/a	Not Gas Proof	Nickel	n/a	n/a	1	2	4
GT++	Clay	500 K	200	400	600	800	1,000	n/a	n/a		Electrum	0.5	1	2	4	8
GT	Bronze	2,000 K	400	800	2,400	4,800	9,600	2,400	800		Cobalt	n/a	n/a	2	4	8
GTNH Coremod	Wrought Iron	2,250 K	600	1,200	3,600	7,200	14,400	3,600	1,200		Aluminium	n/a	n/a	2	4	8
GT++	Lead	1,200 K	1,440	2,880	4,320	5,760	7,200	n/a	n/a		Platinum	1	2	4	8	16
GT	Steel	2,500 K	800	1,600	4,800	9,600	19,200	4,800	1,600		PVC	n/a	n/a	4	8	16
GT++	Polin	2,000 K	1,920	3,840	5,760	7,680	9,600	n/a	n/a		Osmium	2	4	8	16	32
GT	Plastic (Polyethylene)	350 K	1,200	2,400	7,200	14,400	28,800	7,200	2,400		Fluxed Electrum	4	8	16	32	64
GT	Stainless Steel	3,000 K	1,200	2,400	7,200	14,400	28,800	7,200	2,400		Black Plutonium	8	16	32	64	128
GT	PTFE	600 K	1,600	3,200	9,600	19,200	38,400	9,600	3,200		Bedrockium	16	32	64	128	256
GT	Titanium	5,000 K	1,600	3,200	9,600	19,200	38,400	9,600	3,200		Quantium	32	64	128	256	512
GT++	Void Metal	25,000 K	3,200	6,400	9,600	12,800	16,000	n/a	n/a							
GT	Tungstensteel	7,500 K	2,000	4,000	12,000	24,000	48,000	12,000	4,000		Restrictive pipes are the same, but lower the Routing Value					
GT	PBI	1,000 K	2,000	4,000	12,000	24,000	48,000	12,000	4,000							
GT++	Dark Steel	2,750 K	4,640	9,280	13,920	18,560	23,200	n/a	n/a		There are Hexadecuple (16) fluid pipes for the following, but are uncraftable: Copper, Bronze, Steel, Stainless Steel, Titanium, Tungsten, Plastic, PTFE					
GTNH Coremod	Nobium-Titanium	2,900 K	3,000	6,000	18,000	36,000	72,000	18,000	6,000							
GT++	Tungsten	7,200 K	8,640	17,280	25,920	34,560	43,200	n/a	n/a		Fluid Temp in pipe > Heat Limit = Fire (instead of pipe) = Explosion					
GTNH Coremod	Enderium	15,000 K	6,000	12,000	36,000	72,000	144,000	36,000	12,000							
GT++	Tantalloy-60	4,250 K	20,000	40,000	60,000	80,000	100,000	n/a	n/a							
GT++	Tantalloy-61	5,800 K	24,000	48,000	72,000	96,000	120,000	n/a	n/a							
GT++	Europium	7,500 K	24,000	48,000	72,000	96,000	120,000	n/a	n/a							
GT++	Staballoy	7,500 K	25,000	50,000	75,000	100,000	125,000	n/a	n/a							
GT++	Maraging Steel 300	2,500 K	28,000	56,000	84,000	112,000	140,000	n/a	n/a							
GT++	Inconel-690	4,800 K	30,000	60,000	90,000	120,000	150,000	n/a	n/a							
GT++	Maraging Steel 350	2,500 K	32,000	64,000	96,000	128,000	160,000	n/a	n/a							
GT++	Inconel-792	5,500 K	32,000	64,000	96,000	128,000	160,000	n/a	n/a							
GT++	Hastelloy-X	4,200 K	40,000	80,000	120,000	160,000	200,000	n/a	n/a							
GT	High Pressure	1,500 K	n/a	96,000	144,000	192,000	n/a	n/a	n/a							
GTNH Coremod	Naquadah	19,000 K	30,000	60,000	180,000	360,000	720,000	180,000	60,000							
GTNH Coremod	Neutronium	100,000 K	56,000	112,000	336,000	672,000	1,344,000	336,000	112,000							
GTNH Coremod	Nether Star	1,000,000 K	64,000	128,000	384,000	768,000	1,536,000	384,000	128,000							
GTNH Coremod	Mysterious Crystal	1,000,000 K	80,000	160,000	480,000	960,000	1,920,000	480,000	160,000							
GTNH Coremod	Awakened Draconium	10,000,000 K	150,000	600,000	600,000	1,800,000	3,600,000	900,000	300,000							
GTNH Coremod	Infinity	10,000,000 K	200,000	400,000	1,200,000	2,400,000	4,800,000	1,200,000	400,000							



No.	Material Name	Durability	Mining Level	Mining Speed	Damage	Trait	Durability Modifier	Break Chance	Weight	Draw Speed	Arrow Speed	Limb effects base durability and																			
Same as above? Obsolete?																															
Pickaxe		Durability			Damage		Speed																								
Shovel		Head*Handle Modifier			Head + 1																										
Headaxe		Head*Handle Modifier			Head + 2																										
Broadsword		Head*Handle Modifier*1.2			Head + 3																										
Longsword		Head*Handle Modifier			Head + 4	4 Multi with 1.5 white Ct																									
Rapier		Head*Handle Modifier*0.7			Head + 175.8																										
Dagger		Head*Handle Modifier			Head + 1																										
Cutlass		Head*Handle Modifier*1.5			Head + 4																										
Frying Pan		Head*Handle Modifier			Head + 2																										
Battle Sqr		Head*Handle Modifier			Head + 1																										
Mallork		Head*Handle Modifier*1.5			Head + 3																										
Chisel		Head*Handle Modifier			Head																										
Lumber Ax		Head Average*Handle Modifier*0.825			Head + 1																										
Chiseler		Head Average*Handle Modifier Average*3.825			Head + 371.4																										
Scythe		Head*Handle Modifier Average*6																													
Excavator		Head Average*Handle Modifier*6.1875																													
Hammer		Head Average*Handle Modifier*5																													
Battleaxe		Head Average*Handle Modifier*5.625																													
Spear		Head Average*2.25																													
Throwing Javelin		Head*Handle Modifier*3.1																													
Shortbow		Head*Handle Modifier Average*3.133																													
Longbow		Head Average*Handle Modifier*1.5			Left Limb is Main H																										
Crossbow		Limb Average*Power Modifier + String Modifier* 125			Left Limb is Main H																										
Arrows		Limb*Body Modifier																													
Bolts		Arrow Head*Handle Modifier*Fishing Modifier*0.1																													
		Body Tip*Handle Modifier*Fishing Modifier*1																													
Stick	Sugarcane	Bone	Blaze Rod	Shall Break Chance*Head Break Chance																											
		1.8	0.85	1.2																											
15%		65%	2%	8%																											

**WIP**



Link to New Large Turbine Calculator

Turbine		Model	Capacity (MW)	Height (m)	Rotor Dia (m)	Hub Height (m)	Tip Speed Ratio	Power Coefficient	Annual Energy Production (MWh)	Capital Cost (\$M)	Levelized Cost of Electricity (¢/kWh)	Payback Period (Years)
GE	9EA	1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
GE	1000	1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		1000	100	240	160	125	11.5	0.47	10000	1000	0.08	10
Siemens	3.6	3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
Siemens	3.6	3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
Siemens	3.6	3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10
		3600	100	240	160	125	11.5	0.47	10000	1000	0.08	10

Check the units of the variables. E-mail and mail address  
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Web Site: [http://www.turbinecalculator.com](#)  
E-mail: [turbinecalculator@turbinecalculator.com](mailto:turbinecalculator@turbinecalculator.com)  
Address: [http://www.turbinecalculator.com](#)





ID	Name	Temperature	Rainfall	Spawn Chance	Root Height	Height Variation	Types	Class	Humidity Bonus
195	null	null	null	null					0 0 0 0 0 0
197	null	null	null	null					0 0 0 0 0 0
198	null	null	null	null					0 0 0 0 0 0
201	null	null	null	null					0 0 0 0 0 0
203	null	null	null	null					0 0 0 0 0 0
204	null	null	null	null					0 0 0 0 0 0
206	null	null	null	null					0 0 0 0 0 0
208	null	null	null	null					0 0 0 0 0 0
210	null	null	null	null					0 0 0 0 0 0
212	null	null	null	null					0 0 0 0 0 0
215	null	null	null	null					0 0 0 0 0 0
217	null	null	null	null					0 0 0 0 0 0
219	null	null	null	null					0 0 0 0 0 0
220	null	null	null	null					0 0 0 0 0 0
221	null	null	null	null					0 0 0 0 0 0
222	null	null	null	null					0 0 0 0 0 0
231	rwg_plains	0.6	0.4	0.1	0.1	0.2	PLAINS	rwg.biomes.base.BaseBiomePlains	0 0 0 0 0 0
236	rwg_temperatef	0.8	0.6	0.1	0.1	0.2	PLAINS	rwg.biomes.base.BaseBiomeTemperateForest	0 0 0 0 0 0
11	FrostRiver	0	0.5	0.1	0.5	0	COLD RIVER	SNOWY net.minecraft.world.biome.BiomeGenRiver	-1 -5 -5 0 0 0
151	JungleEdge M	0.95	0.8	0.1	0.2	0.4	HOT HILLS	net.minecraft.world.biome.BiomeGenMutated	-1 -5 -4 0 0 0
200	rwg_rverice	0	0.1	0.1	0.1	0.2	COLD RIVER	SNOWY rwg.biomes.base.BaseBiomeRiver	-1 -5 -9 -5 0 0
88	Oasis	2	0.3	0.1	0.2	0	HOT DRY	JUNGLE LUSH SANDY	-3 -5 -10 -7 -5 0
117	Visceral Heap	2	0	0.1	0.1	0.2	SPOOKY NETHER	net.minecraft.world.biome.BiomeGenVisceralHeap	-3 -7 -10 0 0 0
137	Phantasmagoric	2	0	0.1	0.1	0.2	SPOOKY NETHER	net.minecraft.world.biome.BiomeGenPhantasmagoricInferno	-3 -7 -10 0 0 0
26	Cold Beach	0.05	0.3	0.1	0	0.025	COLD SNOWY	BEACH	-4 -5 -5 6 0 0
59	Deciduous Forest	0.6	0.8	0.1	0.1	0.2	DENSE DRY	FOREST	-4 -10 -6 0 0 0
121	Woodland	0.6	0.4	0.1	0.1	0.2	DENSE DRY	FOREST	-4 -10 -6 0 0 0
218	rwg_oceanhot	0.8	0.2	0.1	0.1	0.2	HOT DRY	OCEAN SANDY BEACH	-4 -5 -10 -5 -6 0
13	Ice Mountains	0	0.5	0.1	0.45	0.3	COLD MOUNTAIN	SNOWY	-5 -5 -5 0 0 0
41	Alps	0	0.5	0.1	8	0.025	COLD MOUNTAIN	SNOWY	-5 -5 -5 0 0 0
51	Chaparral	0.8	0.6	0.1	0.2	0.2	SPARSE PLAINS		-5 -5 0 0 0 0
127	Desert Oil Field	2	0	0.1	0.1	0.2	SANDY		-5 -5 0 0 0 0
135	Storage Cell	-100	0.5	0.1	0.1	0.2	COLD PLAINS		-5 -5 0 0 0 0
170	Twilight Clearing	0.8	0.4	0.12	0.125	0.05	SPARSE PLAINS		-5 -5 0 0 0 0
140	Ice Plains Spikes	0	0.5	0.1	0.425	0.5	COLD HILLS	SNOWY	-6 -4 -5 0 0 0
158	Cold Tapa M	-0.5	0.4	0.1	0.3	0.4	COLD HILLS	SNOWY	-6 -4 -5 0 0 0
56	Crag	1	0	0.1	2	3	DRY SPOOKY	DEAD MOUNTAIN WASTELAND	-8 -10 -7 -5 -5 0
119	Wasteland	1	0.05	0.1	0.1	0.1	SPARSE SPOOKY	DEAD WASTELAND	-8 -5 -7 -5 -5 0
128	Boneyard	2	0	0.1	0.1	0.2	SPOOKY NETHER	WASTELAND	-8 -7 -10 -5 0 0
136	Corrupted Sands	2	0	0.1	0.1	0.2	SPOOKY NETHER	SANDY	-8 -7 -10 -5 0 0
64	Frost Forest	0	0.5	0.1	0.1	0.2	COLD SPARSE	FOREST SNOWY	-8 -5 -5 0 0 0
113	Thicket	0.6	0.2	0.1	0.1	0.1	DENSE DRY	FOREST PLAINS	-9 -10 -5 6 0 0
35	Savanna	1.2	0	0.1	0.125	0.05	HOT SPARSE	SAVANNA PLAINS	-10 -5 -5 0 0 0
36	Savanna Plateau	1	0	0.1	1.5	0.025	HOT SPARSE	SAVANNA PLAINS	-10 -5 -5 0 0 0
37	Mesa	2	0	0.1	0.1	0.2	MESA SANDY		-10 -5 -5 0 0 0
39	Mesa Plateau	2	0	0.1	1.5	0.025	MESA SANDY		-10 -5 -5 0 0 0
70	Healthland	0.8	0.2	0.1	0.1	0.2	DRY SAVANNA	PLAINS	-10 -5 -10 0 0 0
122	Xeric Shrubland	1	0.2	0.1	0.05	0.1	HOT PLAINS	SANDY	-10 -5 -5 0 0 0
144	space	0.5	0	0.01	0.1	0.2	DRY PLAINS		-10 -10 0 0 0 0
226	rwg_coldPlains	0.2	0.2	0.1	0.1	0.2	COLD WASTELAND		-10 -5 -5 0 0 0
228	rwg_hotPlains	0.9	0.1	0.1	0.1	0.2	HOT SPARSE	SAVANNA PLAINS	-10 -5 -5 0 0 0
229	rwg_hotForest	0.2	0.2	0.1	0.1	0.2	HOT SPARSE	SAVANNA PLAINS	-10 -5 -5 0 0 0
67	Glacier	0	0.2	0.1	1.5	0.025	COLD DEAD	HILLS SNOWY	-11 -5 -4 -5 0 0
207	rwg_riverhot	0.8	0.2	0.1	0.1	0.2	HOT RIVER	DRY SANDY	-11 -5 -10 -9 -5 0
77	Lush Desert	1.1	0.5	0.1	0.2	0.5	HOT DRY	SAVANNA LUSH SANDY	-13 -5 -10 0 -7 -5 0
143	Asteroids	1	0.2	0.01	0.1	0.1	COLD DRY	SPOOKY DEAD	-13 -5 -10 7 -5 0
116	Mesa Plateau F A	2	0	0.1	0.45	0.3	HOT DRY	FOREST SANDY	-14 -5 -10 -6 -5 0
12	Ice Plains	0	0.5	0.1	0.125	0.05	COLD SNOWY	WASTELAND	-15 -5 -5 0 0 0
38	Mesa Plateau F	2	0	0.1	1.5	0.025	SPARSE MESA	SANDY	-15 -5 -5 0 0 0
48	Brushland	1.2	0.1	0.1	0.1	0.2	HOT DRY	SAVANNA PLAINS	-15 -5 -10 0 0 0
94	Polar Chasm	2	0	0.1	0.1	0.2	HOT DRY	SAVANNA PLAINS	-15 -5 -10 0 0 0
95	Prairie	0.8	0.3	0.1	0.1	0.1	SPARSE DRY	PLAINS	-15 -5 -10 0 0 0
104	Shrubland	0.6	0.05	0.1	0.1	0.1	SPARSE DRY	PLAINS	-15 -5 -10 0 0 0
108	Spectral Garden	2	0	0.1	0.1	0.2	HOT DRY	SAVANNA PLAINS	-15 -5 -10 0 0 0
118	Volcano	0.5	0.1	2.5	0.5	0.1	HOT DRY	MOUNTAIN WASTELAND	-15 -5 -10 0 0 0
176	Twilight Glacier	0	0.1	0.12	0.1	0.2	COLD SNOWY	WASTELAND	-15 -5 -5 0 0 0
224	rwg_snowDesert	0	0.1	0.1	0.1	0.2	COLD SNOWY	WASTELAND	-15 -5 -5 0 0 0
17	DesertHills	2	0	0.1	0.45	0.3	HOT DRY	HILLS SANDY	-16 -5 -10 -4 -5 0
49	Canyon	1	0.3	0.1	5	0.025	HOT SPARSE	DRY MOUNTAIN HILLS SANDY	-16 -5 -5 -10 5 4 5 0
50	Canyon Ravine	1	0.3	0.1	-0.1	0.4	HOT DRY	HILLS SANDY	-16 -5 -10 -4 -5 0
163	Savanna M	1.1	0	0.1	0.3625	1.225	HOT SPARSE	DRY SAVANNA HILLS	-16 -5 -10 -4 0 4 0
164	Savanna Plateau	1	0	0.1	1.05	1.225	HOT SPARSE	DRY SAVANNA HILLS	-16 -5 -10 -4 0 4 0
186	Thornlands	0.3	0.2	0.12	6	0.1	DRY DEAD	HILLS WASTELAND	-16 -10 5 4 5 0 0
2	Desert	2	0	0.1	0.125	0.05	HOT SANDY	WASTELAND	-20 -5 -5 0 0 0
42	Arctic	0.05	0.5	0.1	0	0	COLD DEAD	SNOWY WASTELAND	-20 -5 -5 -5 0 0
60	Dry River	1	0	0.1	-0.2	0	HOT DRY	PLAINS SANDY	-20 -5 -10 -5 0 0
92	Outback	1.3	0.05	0.1	0.1	0.1	HOT DRY	SAVANNA PLAINS SANDY	-20 -5 -10 0 5 0 0
100	Scrubland	1.2	0	0.1	0.125	0.05	HOT SPARSE	DRY SAVANNA PLAINS	-20 -5 -10 0 0 0
130	Desert M	2	0	0.1	0.225	0.25	HOT DRY	PLAINS SANDY	-20 -5 -10 -5 0 0
141	moon	0.5	0	0.1	1.5	0.4	COLD DRY	DEAD SANDY	-20 -5 -10 -5 0 0
165	Mesa (Byz)	2	0	0.1	0.1	0.2	HOT DRY	PLAINS SANDY	-20 -5 -10 0 -5 0 0
167	Mesa Plateau M	2	0	0.1	0.45	0.3	HOT DRY	PLAINS SANDY	-20 -5 -10 -5 0 0
230	rwg_hotDesert	1	0	0.1	0.1	0.2	HOT DRY	SANDY	-20 -5 -10 -5 0 0
8	Hell	2	0	0.1	0.1	0.2	HOT DRY	NETHER	-25 -5 -10 -10 0 0
9	Sky	0.5	0.5	0.1	0.1	0.2	COLD DRY	END	-25 -5 -10 -10 0 0
110	Steppe	0.7	0.05	0.1	0.1	0.4	HOT SPARSE	DRY SAVANNA DEAD PLAINS SANDY	-25 -5 -10 0 0 0
142	masFat	0.5	0	0.01	2.5	0.4	COLD DRY	DEAD MESA WASTELAND	-25 -5 -10 -5 -5 0 0
178	Highlands Center	0.3	0.2	0.12	10.5	0.025	DRY DEAD	MESA WASTELAND	-25 -10 -5 -5 0 0
115	Tundra	0.2	0.5	0.1	0	0.1	COLD SPARSE	DRY DEAD WASTELAND	-30 -5 -10 -5 -5 0 0
238	null	null	null	null					
239	null	null	null	null					
240	null	null	null	null					
241	null	null	null	null					
242	null	null	null	null					
243	null	null	null	null					
244	null	null	null	null					
245	null	null	null	null					
246	null	null	null	null					
247	null	null	null	null					
248	null	null	null	null					
249	null	null	null	null					
250	null	null	null	null					
251	null	null	null	null					
252	null	null	null	null					
253	null	null	null	null					
254	null	null	null	null					
255	null	null	null	null					

Input	Amount	Eu Total	EU/t	Tier	Seconds	Solid Item	Fluids Returned By Slot																		
Underground/Spouts/Pyro Wood Pulp/Bees	50	1920	96	MV	1		Sulfuric Heavy Fuel	Sulfuric Light Fuel	Sulfuric Naphtha	Sulfuric Gas															
Oil	100	1920	96	MV	1		Sulfuric Heavy Fuel	Sulfuric Light Fuel	Sulfuric Naphtha	Sulfuric Gas															
Underground	150	1920	96	MV	1		Sulfuric Heavy Fuel	Sulfuric Light Fuel	Sulfuric Naphtha	Sulfuric Gas															
Light Oil	100	5760	288	HV	1		Sulfuric Heavy Fuel	Sulfuric Light Fuel	Sulfuric Naphtha	Sulfuric Gas															
Underground/Pyro Logs/Oils/Bees	1000	28800	120	MV	12		Butane	Propane	Ethane	Methane	Helium														
Uncracked version	1000	10240	256	HV	2	Small Charcoal	Wood Tar	Wood Vinegar	Wood Gas	Dimethylbenzene															
Refinery Gas	1000	10240	256	HV	2	Small Charcoal	Cresote Oil	Phenol	Benzene	Toluene	Dimethylbenzene														
PyroCoke Oven Logs with Nitrogen	1000	10240	256	HV	2	Small Charcoal	Acetic Acid	Water	Ethanol	Methanol	Acetone	Methyl Acetate													
Charcoal Byproducts	1000	10240	256	HV	2	Small Charcoal	CO2	Ethylene	Methane	Carbon Monoxide	Hydrogen														
Wood Tar	1000	10240	256	HV	2	Small Charcoal	Acetic Acid	Water	Ethanol	Methanol	Ammonia	CO2	Methane												
Wood Vinegar	1000	13500	180	HV	3.75	Fertilizer (IC2)	Ethanol	Water																	
Wood Gas	1000	12800	400	HV	1.6	Small Charcoalx2	Biogas	Water																	
Fermented Biomass	3000	120000	480	HV	12.5	Fertilizer (IC2)	Coal Tar Oil	Naphtha	Ethylbenzene	Anthracene	Kerosene														
Biomass (Forestry)	1000	54000	60	MV	45		Distilled Water																		
Biomass (IC2)	288	1024	64	MV	0.8		Acetic Acid																		
Coal Tar	40	1280	64	MV	1		Lubricant																		
Water	1200	48000	120	MV	20		Fish Oil	Water																	
Vinegar	1400	48000	120	MV	20		Seed Oil	Lubricant	Water																
Fish Oil	1000	48000	120	MV	20		Cresote Oil	Lubricant																	
Seed Oil	20000	12000	60	MV	10	Mysterious Hydrog	Air	Helium																	
Cresote Oil	1000	38400	480	HV	4	Small Quicklime	Calcium Acetate Solution	Acetone	CO2																
Air	1000	51200	640	EV	4		Acetone	Ethenone	Methane																
Calcium Acetate Solution	432	3000	30	LV	5	Sulfur Dust	Acetone	Oxygen																	
Acetone	1000	12000	60	MV	10		Sulfur Dioxide	Water																	
Sulfur Dioxide	2000	38400	64	MV	30		Sulfurous Acid	Hydrochloric Acid	Water																
Sulfurous Acid	3000	72000	120	MV	30		Diluted Hydrochloric Acid	Sulfuric Acid	Water																
Diluted Hydrochloric Acid	5200	230400	256	HV	45		Diluted Sulfuric Acid	Sulfurous Acid	IS Hydrogen Chloride																
Diluted Sulfuric Acid	1600	1152000	1920	EV	30	Ashes	Industrial Strength Acids	Sulfuric Acid	Nitrogen Dioxide	Methane	Mercury														
Industrial Strength Acids	1000000000	14400000	1920	EV	375		Sulfuric Apattle Mix	From the pollution scrubber multiblock (don't bother)	Oxygen	Argon	CO2	Neon	Helium	Methane	Krypton	Hydrogen	Xenon								
Sulfuric Apattle Mix	1000000000	14400000	1920	EV	375		Pollution	Use the Liquid Air Fluid Hatch and the Giant Output Hatch	Nitrogen	Oxygen	Argon	CO2	Neon	Helium	Methane	Krypton	Hydrogen	Xenon							
Pollution	9000	720000	480	HV	75	Salv6	Liquid Air	Platinum Group Processing	Ruthenium Tetraoxide																
Platinum Group Processing	1000	1152000	7680	IV	7.5		Hot Ruthenium Tetraoxide	Platinum Group Processing	Osmium Solution	Water															
Hot Ruthenium Tetraoxide	1000	14400	180	HV	4		Acidic Osmium Solution	Ethanol	Water																
Acidic Osmium Solution	1000	14400	180	HV	4		Vodka	Ethanol	Water																
Vodka	1000	14400	180	HV	4		Generic High Proof	Ethanol	Water																
Generic High Proof	1000	14400	180	HV	4		Beer	Ethanol	Water																
Beer	1000	14400	180	HV	4	Fertilizer (IC2)	Korn	Ethanol	Water																
Beer	1000	14400	180	HV	4		Sugar Whine	Ethanol	Water																
Sugar Whine	1000	14400	180	HV	4		Doppelkorn	Ethanol	Water																
Doppelkorn	1000	14400	180	HV	4		Fake Jaegermeister	Ethanol	Water																
Fake Jaegermeister	1000	14400	180	HV	4		Cider	Ethanol	Water																
Cider	1000	14400	180	HV	4	Fertilizer (IC2)	Dark Beer	Ethanol	Water																
Dark Beer	1000	14400	180	HV	4		Wine	Ethanol	Water																
Wine	1000	14400	180	HV	4		Real Jaegermeister!	Ethanol	Water																
Real Jaegermeister!	1000	14400	180	HV	4		Rum	Ethanol	Water																
Rum	1000	14400	180	HV	4	Sugarx1	Alcopops	Ethanol	Water																
Alcopops	1000	14400	180	HV	4		Pirate Brew	Ethanol	Water																
Pirate Brew	1000	14400	180	HV	4		Meme-tier	Heavy Oil	Oil	Cresote Oil	Water	FermentedBacteri	Fermented Biomass	Super Heavy Radox	Heavy Radox	Deluted Xenoxene	Light Radox	Super Light Radox							
Meme-tier	1000	294912000	491520	UV	30	Ashes	Raw Radox	Xenoxene	Light Radox																
Raw Radox	1000	294912000	491520	UV	30	Ashes	Meme-tier	Deluted Xenoxene	Radox Gas																
Meme-tier	1000	294912000	491520	UV	30	Ashes	Cracked Radox																		

These are not in the order the game lists them, they're in order of (mostly) probable usefulness/when you would use them. See the other sheet for cracked fluids, it's almost all from oil. Distillery recipes give you all the fluids, unlike the single blocks. In addition, they're generally faster and do more at a time too, so the Distilled Water is much faster in the DT for example.

Cracked Type	Cracked X	Solid Item	Heavy Fuel	Light Fuel	Naphtha	Toluene	Benzene	Butene	Butadiene	Propane	Propene	Ethane	Ethylene	Methane	Butane	Octane	Hydrogen	Helium
LSC	Light Fuel	Tiny Carbonx1	150		400	40	200	75	60	20	150	10	50	50				
MSC	Light Fuel	Tiny Carbonx2	100		250	50	300	90	75	35	200	30	150	150				
SSC	Light Fuel	Tiny Carbonx3	50		100	30	150	65	50	50	250	50	250	250				
LHC	Light Fuel				800					200		125		125	150	100		
MHC	Light Fuel				500					1100		400		400	200	50		
SHC	Light Fuel				200					125		1500		1500	125	20		
LSC	Heavy Fuel	Tiny Carbonx1		300	50	25	125	25	15	3	30	5	50	50				
MSC	Heavy Fuel	Tiny Carbonx2		200	200	40	200	40	25	5	50	7	75	75				
SSC	Heavy Fuel	Tiny Carbonx3		100	125	80	400	80	50	10	100	15	150	150				
LHC	Heavy Fuel			600	100					100		75		75	100			
MHC	Heavy Fuel			400	400					150		100		100	150			
SHC	Heavy Fuel			200	250					300		175		175	300			
LSC	Naphtha	Tiny Carbonx1	75	150		40	150	80	150	15	200	35	200	200				
MSC	Naphtha	Tiny Carbonx2	50	100		30	125	65	100	30	400	50	350	350				
SSC	Naphtha	Tiny Carbonx3	25	50		20	100	50	50	15	300	65	500	500				
LHC	Naphtha									300		250		250	800			
MHC	Naphtha									1100		400		400	200			
SHC	Naphtha									125		1500		1500	125			
None	Refinery Gas									70		100		750	60			20
LSC	Refinery Gas	Tiny Carbonx1									45	8	85	1026				20
MSC	Refinery Gas	Tiny Carbonx1									8	45	92	1018				20
SSC	Refinery Gas	Tiny Carbonx1									8	8	25	1143				20
LHC	Refinery Gas													1400			1340	20
MHC	Refinery Gas													1400			3340	20
SHC	Refinery Gas													1400			4340	20
LSC	Butene	Small Carbonx1									750		500	250				
MSC	Butene	Small Carbonx1									200		1300	400				
SSC	Butene	Small Carbonx6									125		313	1500				
LHC	Butene							334			334	334	334	334				
MHC	Butene										389	556	334	1056				
SHC	Butene												1000	2000				
LSC	Butadiene	Small Carbonx3									750		188	188				
MSC	Butadiene	Small Carbonx3									125		1125	188				
SSC	Butadiene	Carbon Dustx1									125		188	1125				
LHC	Butadiene							667					667					
MHC	Butadiene							223			223	400	445	223				
SHC	Butadiene									260		926	389	2667				
LSC	Propane	Tiny Carbonx2											750	1250				
MSC	Propane	Small Carbonx1											500	1500				
SSC	Propane	Tiny Carbonx4											250	1750				
LHC	Propane											1000		1000				
MHC	Propane													3000				
SHC	Propane													3000			2000	
LSC	Propene	Small Carbonx2											1000	500				
MSC	Propene	Small Carbonx3											750	750				
SSC	Propene	Small Carbonx6												1500				
LHC	Propene									500			500	500				
MHC	Propene											1000		1000				
SHC	Propene													3000				
LSC	Ethane	Small Carbonx1											250	1250				
MSC	Ethane	Tiny Carbonx6											125	1375				
SSC	Ethane	Small Carbonx2												1500				
LHC	Ethane													2000				
MHC	Ethane													2000			2000	
SHC	Ethane													2000			4000	
LSC	Ethylene	Carbon Dustx1												1000				
MSC	Ethylene	Carbon Dustx1												1000				
SSC	Ethylene	Carbon Dustx1												1000				
LHC	Ethylene											1000						
MHC	Ethylene													2000				
SHC	Ethylene													2000				
LSC	Butane	Tiny Carbonx2								750		125	125	1063				
MSC	Butane	Tiny Carbonx2								125		750	750	438				
SSC	Butane	Tiny Carbonx11								125		125	125	2000				
LHC	Butane									667		667		667				
MHC	Butane											1000		2000				
SHC	Butane													1000				

Butene, Propane, Ethane, Butane, Refinery Gas and Octane all have no uses other than being used as fuel, making fuel, or being cracked some more.  
Butadiene can additionally be made into Styrene-Butadiene rubber.  
Light and Heavy Fuel can additionally be made into Diesel/Cetane and used to make Raw Bio Fiber, Throwable Bomb (don't bother), and OC Grog+Nanomachines.  
Naphtha can additionally used to make Polycaprolactam which is for string (don't bother).

Nonstandard Recipes (see also uncracked Refinery Gas above)

Being Cracked	Cracker+Crackee=Cracked	Amt	Solid	Water	Ruthenium Tetraoxide
Ruthenium Tetraoxide Solution	1000 Steam+1000 RTS=2000L Hot RTS	9000	Saltx6	1800	7200
Super Light Radox	1L Silver Plasma+100 SLR=100 Cracked Radox	1000	Ashes	100	900

Cracked Type	Cracked X	Solid Item	Heavy Fuel	Light Fuel	Naphtha	Toluene	Benzene	Butene	Butadiene	Propane	Propene	Ethane	Ethylene	Methane	Butane	Octane	Hydrogen	Helium
Cracking Unit Recipe Info								DT Recipe Info										
Cracking Type	Amt of H/Steam		EU/t	Tier	Total EU	Seconds		Cracked X	EU/t	Tier	Total EU	Seconds						
Lightly Steam-Cracked X	1000		240	HV	9600	2		SHC Butadiene	120	MV	13440	5.6						
Moderately Steam-Cracked X	1000		360	HV	21600	3		Almost Everything	120	MV	14400	6						
Severely Steam-Cracked X	1000		480	HV	38400	4		SSC Propene	120	MV	21600	9						
Lightly Hydro-Cracked X	2000		120	MV	4800	2		MSC Propene	120	MV	21600	9						
Moderately Hydro-Cracked X	4000		180	HV	10800	3		MSC Butene	120	MV	23040	9.6						
Severely Hydro-Cracked X	6000		240	HV	19200	4		See the other sheet for the 3 non-standard ones, plus all the other recipes										
Hot RTS	1000		480	HV	72000	7.5												
Cracked Radox	1L Silver Plasma		491520	UV	245760000	25												

Inspired by smeany's version: [https://docs.google.com/spreadsheets/d/1fiqKryaKXYWTKu6p\\_45zYcdSJXYzabJ1QfzPBmC7a\\_/edit#gid=0](https://docs.google.com/spreadsheets/d/1fiqKryaKXYWTKu6p_45zYcdSJXYzabJ1QfzPBmC7a_/edit#gid=0)

Plasma name	Fusion Tier	Input 1	Amount	Input 2	Amount	Start (EU)	Usage (EU)	Time (ticks)	Amount (L)	Energy Density (EU/1000L)	Output (EU)	Output on T3 (EU)
Helium	1	Titanium	125	Deuterium	125	40,000,000	4096	16	125	81,920,000	640,000	1,240,000
Boron	1	Lithium	144	Helium Plasma	144	50,000,000	10240	240	144	112,040,000	87,584	275,336
Helium	1	Helium-3	125	Deuterium	125	60,000,000	1520	16	125	81,920,000	640,000	2,505,000
Calcium	1	Oxygen	128	Magnesium	128	120,000,000	7680	128	128	168,416,000	23,952	94,208
Titanium	2	Fluorine	144	Aluminum	144	100,000,000	49152	180	144	186,000,000	176,847	353,084
Oxygen	2	Lithium	144	Boron Plasma	144	100,000,000	49152	240	144	131,072,000	38,643	157,086
Zinc	2	Titanium	250	Copper	72	180,000,000	49152	16	72	226,204,000	1,018,368	2,208,736
Nitrogen	2	Deuterium	16	Beryllium	16	180,000,000	10204	16	125	129,204,000	1,008,000	2,016,000
Nickel	2	Silicon	144	Cobalt	144	200,000,000	49152	16	144	209,516,000	2,425,644	4,851,288
Sulfur	2	Lithium	16	Aluminum	16	340,000,000	10240	32	144	172,320,000	780,768	1,533,537
Ti	2	Helium-3	375	Silver	144	280,000,000	49152	16	144	304,496,000	2,740,464	5,480,928
Silver	3	Ancient	144	Gold	144	300,000,000	49152	16	144	282,480,000	2,544,168	2,544,168
Bismuth	3	Zinc Plasma	72	Tantalum	144	300,000,000	98304	16	144	429,984,000	3,833,696	3,833,696
Iron	3	Magnesium	16	Silicon	16	360,000,000	7680	32	144	208,438,000	928,971	928,971
Boron	3	Fluorine	900	Indium	144	400,000,000	98304	32	144	480,960,000	2,027,928	2,027,928
Nickel	3	Fluorine	144	Plutonium	241	480,000,000	30720	16	144	213,911,000	1,924,299	1,924,299
Americium	3	Hydrogen	2000	Plutonium 241	144	800,000,000	98304	64	144	801,760,000	1,128,960	1,128,960

Old	Tier	Input	Amount	Input	Amount	Start	Usage	Time	Total eu	Output	Plasma Value	eu per Process	Machine	Machine	Machine	Machine	Machine
Helium Plasma	I	Titanium	125	Deuterium	125	40,000,000	4096	16	85536	125	81,920	10,240,000	640,000	117,875 LV Electrolyser	156.25 LV Centrifuge	31.25 W Centrifuge	Oil Drilling in the Moon
Helium Plasma	I	Helium-3	125	Deuterium	125	60,000,000	2048	16	32768	125	81,920	10,240,000	640,000				
Nitrogen Plasma	II	Deuterium	16	Beryllium	16	180,000,000	10204	16	262144	128	120,024	10,128,000	1,008,000				
Oxygen Plasma	I	Helium-3	125	Carbon	128	80,000,000	4096	32	131072	128	131,072	16,384,000	512,000				
Sulfur Plasma	I	Lithium	16	Aluminum	16	240,000,000	10240	32	327680	144	170,368	24,536,000	786,708				
Argon Plasma	II	Carbon	144	Magnesium	144	180,000,000	24576	32	786432	125	166,416	23,552,000	736,000				
Iron Plasma	III	Magnesium	16	Silicon	16	360,000,000	8192	32	262144	144	208,438	20,727,072	928,971				
Nickel Plasma	III	Fluorine	144	Plutonium	241	480,000,000	30720	16	923200	144	213,911	20,786,784	1,924,299				
Zinc Plasma	II	Titanium	250	Copper	72	180,000,000	49152	16	786432	72	228,304	16,293,888	1,018,368	187.5 LV Electrolyser	250 LV Centrifuge	62.5 W Centrifuge	112.5 W Centrifuge
Nickel Plasma	II	Silicon	144	Cobalt	144	200,000,000	49152	16	786432	144	209,516	20,810,354	2,027,928				
Titanium Plasma	III	Ancient	144	Gold	144	300,000,000	49152	16	786432	144	282,688	40,708,640	2,544,168				
Ti Plasma	II	Helium-3	375	Silver	144	280,000,000	49152	16	786432	144	306,496	43,847,424	2,740,464				
Mercury Plasma	II	Carbon	144	Tungsten	144	300,000,000	49152	16	786432	144	400,608	58,962,400	3,886,400				
Bismuth Plasma	III	Zinc Plasma	72	Tantalum	144	300,000,000	98304	16	1572864	144	420,984	61,341,696	3,833,696	Market Zinc Fusion Reactor	800 MW Centrifuge		
Boron Plasma	III	Fluorine	900	Indium	144	400,000,000	98304	32	3149728	144	480,960	69,880,840	2,027,928				
Americium Plasma	III	Hydrogen	2000	Plutonium 241	144	800,000,000	98304	64	6291408	144	501,760	72,253,440	1,128,960				

Resource	Amount	Material	Amount	Total eu	Usage	Ticks	Amount	Energy Density	Output	Machine
Electrolyser	Hydrogen	2000	Water	45000	36	1030	2	1.33333333		
Centrifuge	Deuterium	16	200	16	1	925				
Centrifuge	Titanium	16	1000	80	16	1	0.25			
Compressor	Compressed Air	1000	Energy Cell	1	800	2	400	0.0025	2.5	
Vacuum Freezer	Liquid Air Cell	1000	Compressor	1000	3000	120	25	40	40	
Centrifuge	Nobel Gases G1	1000	Liquid Air G1	40000	7420	6	1444	36.7143071	0.023954674	
Centrifuge	Helium	9000	Nobel Gases	34000	3400	5	880	50	13.2329412	
Centrifuge	Helium-3	16	2000	80	32	53	0.02125			
Centrifuge	Copper	100	6400	80	80	1.25	0.54			
Centrifuge	Tantalum	0.4	Leads	100	6400	80	80	0.095		

Resource	Amount	Material	Amount	Total eu	Usage	Ticks	Amount	Energy Density	Output	Machine
Electrolyser	Hydrogen	2000	Water	45000	36	1030	2	1.33333333		
Centrifuge	Deuterium	16	200	16	1	925				
Centrifuge	Titanium	16	1000	80	16	1	0.25			
Compressor	Compressed Air	1000	Energy Cell	1	800	2	400	0.0025	2.5	
Vacuum Freezer	Liquid Air Cell	1000	Compressor	1000	3000	120	25	40	40	
Centrifuge	Nobel Gases G1	1000	Liquid Air G1	40000	7420	6	1444	36.7143071	0.023954674	
Centrifuge	Helium	9000	Nobel Gases	34000	3400	5	880	50	13.2329412	
Centrifuge	Helium-3	16	2000	80	32	53	0.02125			
Centrifuge	Copper	100	6400	80	80	1.25	0.54			
Centrifuge	Tantalum	0.4	Leads	100	6400	80	80	0.095		



Wand Core	Tier Materials Required	Wand Capacity	Scepter Capacity	Staff Capacity	"Staffer" Capacity	Notes	Wand Cap	Highest Tier Material	Discount %	Notes
Impregnated Stick	Aluminum/Naga	25	37	-	-	-	TerraSteel	Astral Silver (HV)	80	
Greatwood	Stainless Steel/Lich	50	75	125	187	37 Recharges all aspects to full somewhat quickly	Iron	Iron	-18	
Amber	Stainless Steel/Lich	-	15	-	-	37 Recharges all aspects to full somewhat quickly	Copper	Steel	-6	
Blazing/Bonefly/Obditi	Titanium/Hydra	75	112	175	262	262 Can convert vis types (above 90%, per aspect, immediate, lossy)	Gold	Aluminum	0	
Transmutative	Titanium/Hydra	-	112	-	-	262 Can convert vis types (above 90%, per aspect, immediate, lossy)	Charged Silver	Stainless Steel	4	
Thaumium	Titanium/Hydra	80	120	-	-	Recharges unevenly up to 10%	Enchanted Cloth	Aluminum	5	
Blood	Tungstensteel/Ur Ghast	100	150	50	75	75 Uses LP or health to recharge to full, uneven if using health	Mechanist's	Titanium	5	Drains nodes faster
Blood Infused Wooden	Tungstensteel/Ur Ghast	100	150	-	-	Same as Blood, speedx2, more LP usage	Sojourner's	Titanium	5	Passively drains nearby nodes
Dreamwood	Tungstensteel/Ur Ghast	100	150	250	375	-	Manasteel	Astral Silver (HV)	10	
Livingwood	Tungstensteel/Ur Ghast	100	150	-	-	-	Vinsum	Titanium	10	
Willowwood	Tungstensteel/Ur Ghast	100	150	50	75	-	Charged Thaumium	Titanium	10	
Silverwood	Tungstensteel/Ur Ghast	100	150	250	375	-	Alchemical	Aluminum, T1 Altar	12	Aqua discount, LP discount on Blood/Blood Infused Wooden wands, attacks from a blood wand cause weakness to enemies
Tainted	Tungstensteel/Ur Ghast	150	225	-	-	Recharges all aspects to 10% somewhat slowly while in Tainted L	Shadow-Infused Cloth	Titanium	15	
Profane	Stainless Steel/Lich	150	225	-	-	Trade with villagers to get default one, then recraft it after it dissolves (Thauminite)	Titanium	Titanium	15	
Inferral	Tungstensteel/Ur Ghast	150	225	-	-	Protection from Withering/Fire/Lava, regenerates ignis up to 20%, regt	Blood Infused Iron	Aluminum, T4 Altar	16	Higher LP discount, only on Blood Infused Wooden
Void	Tungstensteel/Ur Ghast	160	240	-	-	Recharges quickly, but unevenly up to 10%	Elementium	Tungstensteel	20	
Warpwood	Tungstensteel/Ur Ghast	250	375	-	-	750 Recharges vis based on warp amount to full	Crimson-Stained Cloth	Aluminum	20	
Staff Core of the Primal	Isidium/Ur Ghast Tower	-	-	250	-	375 Recharges unevenly up to 10%, adds one level of potency to foci	Charged Void	Tungstensteel	20	
Ichorcloth	Damium/Snow Queen	1000	1500	-	-	-	Shadowmetal	Tungstensteel	30	
						No foci, 10% discount No crafting No foci, no crafting, use as a battery	Ichorium	Ominidium	30	
Eldritch	No use	Staffs/Staffers" below Tungstensteel usually require Tier-1 materials								
Necromancer's Staff	No use	Staffs/Staffers" at Tungstensteel and above usually require Chrome Screws/Carminite/Ur Ghast Tower)								

Vis cost to create increases based on both wand core amount and cap discount. If you can't make a wand, by using a lesser cap, wearing discount gear, or making a scepter of the previous tier. TF bosses have purchasable spawn eggs, and you can use the trophies to create the drops too, so don't lose them!

Special Wands	Discount %	Wand Capacity	Notes
Iron Capped Profane Wand	-10	50	Trade with Heretic Villager, Unlimited Vis until contract runs out. Causes sticky warp during use
Void Aspected ?????????? Wand	20	100	Loot from Magic Grandmaster bags
Crystalline Wand	10	250	Cannot be recharged, nonstandard cap
Crystal Shaded Cosmic Neutronium Wand	90	9999999	Endgame Dire Crafting Table recipe, becomes full once you pick it up
Orichalcum Studed Cosmic Neutronium Wand	90	9001	Creative only

Discount Gear Name	Discount %	Warp	How to get
Ring (loot)	1	1	Loot in chests, single aspect, stacks
Ring (crafted)	3	1	TE Arcane Crafting, single aspect, stacks
Crimson Cull Hood	1	1	1 Drops off Crimson Outfits
Shadow Fortress Helm	5	5	5 TM Requires Void Fortress and Infused Gold (T4 planets)
Ichorcloth Cow	5	3	3 TT Lvl Arcane Crafting
Void Fortress Helm	5	3	3 TM Requires Void and Shadowmetal
Void Thaumaturge's Hood	5	2	2 Requires Void
Warped Goggles of Revealing	5	1	1 TM Requires Shadowmetal
Helm of Revealing	5	1	TT Craft
Thauminite Helmet	5	1	TB Use Thauminite made in a Cauldron
Electric Goggles of Revealing	5	5	EMT Requires LV circuits
Primordial Helm	6	10	10 WG Requires Primordial Pearls and Shadowmetal equipment
Cowl of the Abyssal Depths	6	3	3 TT Lvl Infusion
Nanosuit Goggles of Revealing	6	EMT	EMT Requires HV circuits and NanoSuit Helmet
Sanguine Helmet	6	EM	EM Ritual of Binding (Goggles of Revealing)
Solar Goggles of Revealing	7	EMT	EMT Requires Quantum Goggles
Quantum Goggles of Revealing	8	EMT	EMT Requires Assembly Line
Voidmetal Goggles of Revealing	10	5	5 TM Requires Void, Shadowmetal and Nether Star Lens
Infinity Helmet	20	20	Endgame Dire Crafting Table recipe
Crimson Cull Robe	1	1	1 Drops off Crimson Outfits
Thauminite Chestplate	2	1	TB Use Thauminite made in a Cauldron
Thaumaturge's Robe	2	2	Requires Thaumium and Enchanted Fabric
Thaumatonic Harness	2 (5 As)	2	Requires MV and Infusion
Sanguine Robes	3	EM	EM Ritual of Binding (Thauminite Chestplate)
Thaumium Reinforced Wings	4	EMT	EMT Requires Stainless
Bloodstained Thaumaturge's Robe	4	TB	TB Use spikes to get the fabric
Shadow Fortress Cuirass	5	5	5 TM Requires Void Fortress and Infused Gold (T4 planets)
Ichorcloth Robe	5	3	3 TT Lvl Arcane Crafting
Void Fortress Cuirass	5	3	3 TM Requires Void and Shadowmetal
Void Thaumaturge's Robe	5	2	2 Requires Void
Nanosuit Wings	5	EMT	EMT Requires NanoSuit Bodyarmor and Titanium
Bewitched Robe	5	WG	WG requires sealed wood for spinning wheel (WG)
Primordial Cuirass	6	10	10 WG Requires Primordial Pearls and Shadowmetal equipment
Quantum Wings	6	EMT	EMT Requires Assembly Line
Robes of the Stratosphere	6	3	3 TT Lvl Infusion
Infinity Breastplate	20	20	Endgame Dire Crafting Table recipe
Crimson Cull Leggings	1	1	1 Drops off Crimson Outfits
Thaumaturge's Leggings	2	2	Requires Thaumium and Enchanted Fabric
Thauminite Leggings	3	1	TB Use Thauminite made in a Cauldron
Sanguine Leggings	3	EM	EM Ritual of Binding (Thauminite Leggings)
Bloodstained Thaumaturge's Leggings	3	TB	TB Use spikes to get the fabric
Bewitched Leggings	4	WG	WG requires sealed wood for spinning wheel (WG)
Shadow Fortress Thigh Guards	5	5	5 TM Requires Void Fortress and Infused Gold (T4 planets)
Void Fortress Thigh Guards	5	3	3 TM Requires Void and Shadowmetal
Void Thaumaturge's Leggings	5	3	3 TT Lvl Arcane Crafting
Ichorcloth Leggings	5	2	2 Requires Void
Void Thaumaturge's Leggings	5	2	2 Requires Void
Primordial Greaves	6	10	10 WG Requires Primordial Pearls and Shadowmetal equipment
Leggings of the Burning Mantle	6	3	3 TT Lvl Infusion
Infinity Pants	20	20	Endgame Dire Crafting Table recipe
Thaumaturge's Boots	1	1	Requires Thaumium and Enchanted Fabric
Crimson Cull Boots	1	1	1 Drops off Crimson Outfits
Thauminite Boots	1	1	TB Use Thauminite made in a Cauldron
Bloodstained Thaumaturge's Boots	2	TB	TB Use spikes to get the fabric
Electric Boots of the Traveller	2	EMT	EMT Requires MV motors
Sanguine Boots	2	EM	EM Ritual of Binding (Thauminite Boots)
Nanosuit Boots of the Traveller	4	EMT	EMT Requires HV motors and Energy Crystal
Boots of the Voidwalker	5	5	5 TM Requires Void and Shadowmetal (doesn't list discount on gear)
Ichorcloth Boots	5	3	3 TT Lvl Arcane Crafting
Quantum Boots of the Traveller	5	EMT	EMT Requires Assembly Line
Primordial Boots	6	10	10 WG Requires Primordial Pearls and Shadowmetal equipment
Boots of the Horizontal Shield	6	3	3 TT Lvl Infusion
Infinity Boots	20	20	Endgame Dire Crafting Table recipe

The first gear you get will likely be the 3 vanilla clothes, followed by the goggles. The Bewitched robe and leggings are both easy to get and close to the max discount. Once you get Void, replace the leggings. For the goggles you can go through the warp to get the Voidmetal one, or go up the electric path. The electric path is similar for the boots. You can't enchant them though. Nano and Quantum boots also don't work properly with Elevators.

GT Tier	Furnace	Microwave	Unboxing Scrap Boxes	Recycler	Compressor	Extractor	Thermal Centrifuge	Ore Washer	Macerator	Forming Press	Printer				
LV EU/t	4	4	1	1	2	2	48	16	2	8	2				
MV EU/t	16	16	4	4	8	8	192	64	8	32	8				
HV EU/t	64	64	16	16	32	32	768	256	32	128	32				
EV EU/t	256	256	64	64	128	128	3072	1024	128	512	128				
IV EU/t	1024	1024	256	256	512	512	12288	4096	512	2048	512				
LuV EU/t	4096	4096	1024	1024	2048	2048	49152	16384	2048	8192	2048				
ZPM EU/t	16384	16384	4096	4096	8192	8192	196608	65536	8192	32768	8192				
UV EU/t	65536	65536	16384	16384	32768	32768	786432	262144	32768	131072	32768				
LV Ticks	128	32	16	45	400	400	400	400	400	128	256				
MV Ticks	64	16	8	23	200	200	200	200	200	64	128				
HV Ticks	32	8	4	12	100	100	100	100	100	32	64				
EV Ticks	16	4	2	6	50	50	50	50	50	16	32				
IV Ticks	8	2	1	3	25	25	25	25	25	8	16				
LuV Ticks	4	1	1	2	13	13	13	13	13	4	8				
ZPM Ticks	2	1	1	1	7	7	7	7	7	2	4				
UV Ticks	1	1	1	1	4	4	4	4	4	1	2				
Multi Smelter															
Eu/t Table		Hatch Tier	LV	MV	HV	EV	IV	LuV	ZPM	UV	UHV	UEV	UIV	UMV	
		EU Amp Size	32	128	512	2048	8192	32768	131072	524288	2097152	8388608	33554432	134217728	
		Level	1	2	3	4	5	6	7	8	9	10	11	12	
		Efficiency Discount													
Cupronickel	1	1	4	16	64	256	1,024	4,096	16,384	65,536	262,144	1,048,576	4,194,304	16,777,216	
Kanthal	2	1	8	32	128	512	2,048	8,192	32,768	131,072	524,288	2,097,152	8,388,608	33,554,432	
Nichrome	4	1	16	64	256	1,024	4,096	16,384	65,536	262,144	1,048,576	4,194,304	16,777,216	67,108,864	
Tungstensteel	8	1	32	128	512	2,048	8,192	32,768	131,072	524,288	2,097,152	8,388,608	33,554,432	134,217,728	
HSS-G	16	2	32	128	512	2,048	8,192	32,768	131,072	524,288	2,097,152	8,388,608	33,554,432	134,217,728	
Naquadah	16	4	16	64	256	1,024	4,096	16,384	65,536	262,144	1,048,576	4,194,304	16,777,216	67,108,864	
Naquadah Alloy	16	8	8	32	128	512	2,048	8,192	32,768	131,072	524,288	2,097,152	8,388,608	33,554,432	
Electrum Flux															
Awakened Draconium															
Time (Ticks)			512	256	128	64	32	16	8	4	2	1	1	1	



Name	Mod	Features	Current Tier	Proposed Tier Change	Actual Proposed Change	Notes
Ender Pearl	Vanilla	- Throw teleport to its landing spot - You take fall damage - Consumable - Can be enchanted to enhance it - Mostly just faster/further	Defeat an Enderman			
Ender Pearl (Enhanced)	Hardcore Ender Expansion	- Shoots out a slow beam, you'll teleport to where it hits - Range of 75 blocks - Regenerates uses in the presence of an energy cluster - Teleports back to a linked location at the cost of durability - Regenerates uses in the presence of an energy cluster - Intradim only	HV? Beat an Ender Eye			Can be easily upgraded to 1) be instant 2) range of ~250 blocks 3) greater capacity (uses) Energy clusters are usually found in the End, but you can also move them (may explode)
Spatial Dash Gem	Hardcore Ender Expansion	- Regenerates uses in the presence of an energy cluster - Teleports back to a linked location at the cost of durability - Regenerates uses in the presence of an energy cluster - Intradim only	IV			Can also be upgraded, but they're less useful No one actually cares about these right? Also TF dim, Bedrock dim, Torment dim, Spirit World dim, Deep Dark dim, Toxic Everglades dim, probably other portals to dims.
Nether/End Portal/Exit Portal	Vanilla	- Go to Nether/End/Spawn - Only vertical transport - 20 block range - Configurable - Works in The End - Uses "energy" from energy clusters - 990 block range? - Select a destination from a map - 128 block range - 5 second cooldown - Anchor to Anchor - Configurable	MV			Can be set to use xp, number of blocks it goes through, range, special rules (abort/increment/ignore) based on specific blocks (see config for details)
Elevator	OpenBlocks	- Works in The End - Uses "energy" from energy clusters - 990 block range? - Select a destination from a map - 128 block range - 5 second cooldown - Anchor to Anchor - Configurable	Defeat the Ender Dragon			They don't seem to be near the main island? You can't move them Cooldown and range can be configured. Can be renamed or made private. Has pathing problems linking to other Anchors when there is no clear path in between (having empty space or glass helps). IE: Deep underground to the surface (but within 128 blocks) doesn't work, but make a shaft and it does)
Transport Beacon	Hardcore Ender Expansion	- Works in The End - Uses "energy" from energy clusters - 990 block range? - Select a destination from a map - 128 block range - 5 second cooldown - Anchor to Anchor - Configurable	HV			Position the cursor over an Anchor until it turns orange and right click to teleport
Travel Anchor	EnderIO	- Can teleport to anchors from up to 128 blocks away - When held Anchors can be seen through walls - Can teleport in the direction you look - Can be used repeatedly, also goes through blocks - Uses RF - Can be enchanted to be like SoT - Hold shift to see Anchors - Interdimensional transport - Requires RF - Can only be set to one place at a time - Configurable	HV			Uses Coordinate Selector to set coordinates. Can set to blocks in the distance you can see if you really want to. Interdimensional travel is 100.000RF, intra is: power = (this value) * ln(0.005*distance + 1) powerCoefficient=100000, with the pC being configurable. You can teleport to it like a travel anchor with the Staff/Ender Sword.
Staff of Travelling	EnderIO	- Can teleport to anchors from up to 128 blocks away - When held Anchors can be seen through walls - Can teleport in the direction you look - Can be used repeatedly, also goes through blocks - Uses RF - Can be enchanted to be like SoT - Hold shift to see Anchors - Interdimensional transport - Requires RF - Can only be set to one place at a time - Configurable	HV			Seems worse than Anchors?
The Ender	EnderIO	- Can teleport to anchors from up to 128 blocks away - When held Anchors can be seen through walls - Can teleport in the direction you look - Can be used repeatedly, also goes through blocks - Uses RF - Can be enchanted to be like SoT - Hold shift to see Anchors - Interdimensional transport - Requires RF - Can only be set to one place at a time - Configurable	HV			Use Spatial Pyllons to put yourself into the cell dimension, move the cell somewhere else, reverse to get yourself back out. Death may or may not release you from the dim.
Telepad	EnderIO	- Can teleport to anchors from up to 128 blocks away - When held Anchors can be seen through walls - Can teleport in the direction you look - Can be used repeatedly, also goes through blocks - Uses RF - Can be enchanted to be like SoT - Hold shift to see Anchors - Interdimensional transport - Requires RF - Can only be set to one place at a time - Configurable	UHV+ Stargate components	Lower?	Remove stargate components	
Short Range Telepad	Galacticraft	- 250 block range - Intradimensional? - 350 EU/s even when not in use - Requires AE2 - Can get stuck in the spatial cell dim - Complex, but this is GTNH after all	IV			Use Spatial Pyllons to put yourself into the cell dimension, move the cell somewhere else, reverse to get yourself back out. Death may or may not release you from the dim.
<AE2 Spatial Cell Teleportation>	Applied Energetics 2	- 250 block range - Intradimensional? - 350 EU/s even when not in use - Requires AE2 - Can get stuck in the spatial cell dim - Complex, but this is GTNH after all	LuV			You need radon, otherwise it's HV Teleports stuff in front, instead of above. Uses a redstone signal, and no cost to activate. Try chaining a couple dozen with redstone stuff if you want to FLEX.
Blink Focus	Forbidden Magic	- Instant teleport - Works similarly to teleposers, swapping blocks/entities - Range of 16 blocks - 10 locations per CG, set by Celestial Pearl - no travel cost - Intradimensional only	HV/EV			Right click a CG with a pearl to set it. At the end of thaumcraft stuff really.
Transvector Dislocator	Thaumic Tinkerer	- Instant teleport - Works similarly to teleposers, swapping blocks/entities - Range of 16 blocks - 10 locations per CG, set by Celestial Pearl - no travel cost - Intradimensional only	MV			Pocket Planes are another dim. Probably creates new plane area in the same dim when you create a new one, like advanced rocketry space station dim. Complicated. Bottom right researches in TH.
Celestial Gateway	Thaumic Tinkerer	- Instant teleport - Works similarly to teleposers, swapping blocks/entities - Range of 16 blocks - 10 locations per CG, set by Celestial Pearl - no travel cost - Intradimensional only	LuV			HV for Distillery to get gypsum for the chalk. If you push back the Distillery, it would make half the mod unusable until then since it's used a lot.
Wand Focus: Celestial Recall	Thaumic Tinkerer	- Instant teleport - Works similarly to teleposers, swapping blocks/entities - Range of 16 blocks - 10 locations per CG, set by Celestial Pearl - no travel cost - Intradimensional only	LuV			Infusing is a Wilchery Thing. Costs 40% infusion power to teleport to spawn point in the same dimension, 60% if another dim. Costs 20%/40% for Bound Waystone teleport. HV cost is the distillery. HV for chalk again. See <a href="https://sites.google.com/site/wilcherymod/infusion-of-otherwhere">https://sites.google.com/site/wilcherymod/infusion-of-otherwhere</a> You could maybe push the infusions yourself back by changing the recipes required for them, see the first 4 items on <a href="https://sites.google.com/site/wilcherymod/infusion">https://sites.google.com/site/wilcherymod/infusion</a> BM is behind a bunch of Warp. Right click with a focus on a teleposer to set coordinates. Foci can range from 1x1x1 to 7x7x7, teleporting entities and blocks. LP cost is LP=0.5*distance* (count teleported blocks and entities). So 1,000 blocks is 500LP for just yourself. Interdim is somehow 0. This is ludicrously low (and broken for interdim), considering you'll likely have a Well of Suffering by this point (Tier 4 Altar), and effectively unlimited LP. For those who don't know, you probably get around 100LP a second. See <a href="https://bloodmagic-altar-simulator.herokuapp.com/">https://bloodmagic-altar-simulator.herokuapp.com/</a> . Can move nodes too.
Planar Gateway	Thaumic Horizons	- 4 Gateways per Pocket Plane - Only 10 from PP - Can make more PPs - Interdimensional? - One time use only? - Can copy Bound Waystones - Must be Infused - Teleport to spawn point (30min cooldown) - Or use a bound waystone (60sec cooldown, consumed) - Uses a /command or chat to teleport	MV? LV maybe?	Higher?		Apparently *Teleporters can explode if you leave and reload a world without quitting Minecraft*.
Waystone/Bound Waystone	Witchery	- 4 Gateways per Pocket Plane - Only 10 from PP - Can make more PPs - Interdimensional? - One time use only? - Can copy Bound Waystones - Must be Infused - Teleport to spawn point (30min cooldown) - Or use a bound waystone (60sec cooldown, consumed) - Uses a /command or chat to teleport	HV	Higher?		See <a href="https://forum.industrial-craft.net/thread/6915-ic2-exp-1-7-10-gravitation-suite-v2-0-3/?post=1">https://forum.industrial-craft.net/thread/6915-ic2-exp-1-7-10-gravitation-suite-v2-0-3/?post=1</a> I wasn't able to change mode to test. Costs 1M intradim, 1.5M for interdim.
Ruby Slippers	Witchery	- 4 Gateways per Pocket Plane - Only 10 from PP - Can make more PPs - Interdimensional? - One time use only? - Can copy Bound Waystones - Must be Infused - Teleport to spawn point (30min cooldown) - Or use a bound waystone (60sec cooldown, consumed) - Uses a /command or chat to teleport	HV	Higher?		
Infusion of Otherwhere	Witchery	- 4 Gateways per Pocket Plane - Only 10 from PP - Can make more PPs - Interdimensional? - One time use only? - Can copy Bound Waystones - Must be Infused - Teleport to spawn point (30min cooldown) - Or use a bound waystone (60sec cooldown, consumed) - Uses a /command or chat to teleport	HV			
Teleposer	Blood Magic	- Interdimensional - Set destination with Teleposition Focus - Can only send to another Teleposer - One-way, can set 2nd Teleposer to somewhere else - Costs LP (blood in soul network) to teleport - Swaps with blocks/entities at destination - Costs EU based on distance - Intradimensional only - Can explode?	EV	Higher	Increase LP amount if possible. 100,000 or more for interdim?	
Teleporter	IC2	- Interdimensional - Set destination with Teleposition Focus - Can only send to another Teleposer - One-way, can set 2nd Teleposer to somewhere else - Costs LP (blood in soul network) to teleport - Swaps with blocks/entities at destination - Costs EU based on distance - Intradimensional only - Can explode?	ZPM	Lower?		
Relocator	Gravitation Suite	- Can save points to teleport to, up to 10 - Interdimensional - No point to make since the ECD is better in every way - Teleports to a single set location - Uses durability - Interdimensional	UHV+ Stargate components	Lower	Remove stargate components	
Charm of Dislocation	Draconic Evolution	- Can save points to teleport to, up to 10 - Interdimensional - No point to make since the ECD is better in every way - Teleports to a single set location - Uses durability - Interdimensional	UV+			
Dislocator Pedestal	Draconic Evolution	- Can save points to teleport to, up to 10 - Interdimensional - No point to make since the ECD is better in every way - Teleports to a single set location - Uses durability - Interdimensional	ZPM?			Shift right-click to get it back out.
Enhanced Charm of Dislocation	Draconic Evolution	- Can save points to teleport to, up to 10 - Interdimensional - No point to make since the ECD is better in every way - Teleports to a single set location - Uses durability - Interdimensional	UHV+ Stargate components		Remove stargate components	The Best
Teleporter Stargates	GregTech Stargates	- Can teleport based on coords and dim number. Only TP that you don't need to reach the point first - Epen only - Creative Only	UHV+ Stargate components + uncraftable Power Unit		Remove stargate components	IC2 Stargate Power Unit has no recipe
<various>	Enhanced Portals	- Creative Only	-			For Admins?
Portals		- Interdim, works on mobs too, no cost	T7 rocket? needs 1 core, but fairly cheap to make once unlocked			What even is this? It is called "portal"?

**BTW, this page is from before the TP change, it's not up-to-date anymore**

[1] Stage 1-2

[2] Stage 3

[3] If Stage 3

[4] If Stage 4

[5] If Stage 3, emits at a light level of 7

[6] Emits at a light level of 7

[7] Requires light level below or equal to 10

[8] Stage 1-2

[9] Stage 3-4

[10] Requires light level below or equal to 10

[11] Stage 1-2

[12] Stage 3-4

[13] Requires light level below or equal to 10

[14] Stage 1-2

[15] Stage 3-4  
1500 if has Aluminium Block beneath

[16] Boosts output by 3x

[17] Requires Aluminium Block beneath

[18] Requires light level below or equal to 10

[19] Stage 1-2

[20] Stage 3-4  
1500 if has Copper Block beneath

[21] Boosts output by 3x

[22] Requires Copper Block beneath

[23] Stage 1-2

[24] Stage 3-4  
1500 if has Skull/Head beneath

[25] Boosts output by 3x

- [26] Requires Head/Skull beneath
- [27] Requires light level below or equal to 10
- [28] Stage 1-2
- [29] Stage 3-4  
1500 if has Gold Block beneath
- [30] Boosts output by 3x
- [31] Requires Gold Block beneath
- [32] Requires light level below or equal to 10
- [33] Stage 1-2
- [34] Stage 3-4  
1500 if has Iron Block beneath
- [35] Boosts output by 3x
- [36] Requires Iron Block beneath
- [37] Requires light level below or equal to 10
- [38] Stage 1-2
- [39] Stage 3-4  
1500 if has Tin Block beneath
- [40] Boosts output by 3x
- [41] Requires Tin Block beneath
- [42] Stage 1 250  
Stage 2 2250  
Stage 3 1750
- [43] Stage 1-2 2250  
Stage 3 1750
- [44] Hurts player on collision with Magic Damage
- [45] Stage 1-2 500  
Stage 3 1200
- [46] Stage 4 1800 with Thaumium Block  
Stage 4 3300 with Void Block
- [47] Iron or Thaumium for Thaumium  
Void for Void Nuggets
- [48] Stage 1-4  
Based on config

[49] Stage 1-2

[50] Stage 3

[51] If it can't find one it will use nothing instead

[52] Stage 1-2 1000  
Stage 3 4500

[53] Stage 3 if has Knightmetal Block beneath

[54] Boosts output by 4x (?)

[55] 4x (?) with Knightmetal Block

[56] 65%

[57] 30%

[58] 5%

[59] Requires light level above or equal to 9

[60] Requires light level above or equal to 9

[61] Stage 1-2

[62] Stage 3

[63] Stage 2 gives Saguaro  
Else give Seed Food with Meta 3?

[64] Stage 1 700  
Stage 2 200

[65] Stage 1 700  
Stage 2 200

[66] Stage 1 700  
Stage 2 200

[67] Stage 1 700  
Stage 2 200

[68] Stage 1 700  
Stage 2 300

[69] Stage 1 700  
Stage 2 300

[70] Stage 1 700  
Stage 2 300

[71] Stage 1 700  
Stage 2 300

[72] Stage 1 600  
Stage 2 250

[73] Stage 1 600  
Stage 2 250

[74] Stage 1 600  
Stage 2 250

[75] Stage 1 600  
Stage 2 250

[76] Hurts player on collision with Cactus Damage

[77] Hurts player on collision with Cactus Damage

[78] Stage 2

[79] Stage 3

[80] Mimics Ghosts

[81] If Stage 4 hurts player on collision with Cactus Damage

[82] Lowers the Size of crop by one

[83] Stage 1-2

[84] Stage 3

[85] Stage 4

[86] Stage 1 700  
Stage 2 200

[87] If Stage 4 emits at a light level of 4

[88] If block beneath is Red Granite

[89] If block beneath is Granite



[90] If block beneath is Black Granite

[91] If block beneath is Basalt

[92] If block beneath is Marble

[93] If block beneath is Diorite

[94] If block beneath is Cobblestone/Stone

[95] If block beneath is Andesite

[96] Stage 1-2 300  
If Endstone is beneath  
Stage 2 550

[97] If block beneath is Endstone

[98] If block beneath is Sand/Sandstone

[99] Stage 1 700  
Stage 2 200

[100] Requires light level above or equal to 9