

## GT New Horizons

# MV



missing major multiblock goals, QoL upgrades/equipment, Thaumcraft/magic primer or link to [Thaumcraft Tips](#), discussion of power infrastructure options & links.

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**Medium Voltage** (abbreviated as **MV**) is the second electric tier in GregTech, which introduces fewer new mechanics, but instead improves and expands what you have already seen in LV.

## Goals

Some of the suggested milestones for MV are as follows.

- Craft Electrolyzer to split many natural resources into basic elements, most notably aluminium, oxygen and silicon
- Upgrade your LV machines - you probably can't pass by Arc Furnace, Assembler, Circuit Assembler, Chemical Reactor, Chemical Bath, Cutting Machine, Extruder, Fluid Extractor, Fluid Solidifier, Laser Engraver.
- Diesel is a significant improvement over Light Fuel which can be mixed in the MV [Mixer](#)
- Tree farm setups can switch from Steam to Benzene, but require Gas Turbines
- Make silicon processing line and start accumulating solar grade silicon, you'll need it later
- Making lots of [Polyethylene](#) is also a good idea, automating it is even better
- Upgrade your [EBF\(s\)](#) with [Kanthal coils](#) to smelt new ingots
- Find sources of Chrome and Manganese for stainless steel, a material used very heavily in HV

## Optional Side Quests

- Aluminium & defeating the first [Twilight Forest](#) boss Naga unlocks [Thaumcraft](#)
- Create the Good Miner for additional mining range and fortune bonus. Remember that it can be powered by LV generators!
- Use EnderIO Item Conduits to instantly move things around complex networks. The EnderIO conduits have additional bonuses, such as routing, support for item filtering, and the ability to pull from non-output machine sides, but have less throughput without upgrades.
- Use the Tool Forge to fill out your set of [Tinker's Construct](#) Hammer / Excavator / Scythe / Cleaver etc.
- Convert single-block steam machines to their EU counterparts, or upgrade to Steam multis ([Steam Oven](#), [Steam Grinder](#), [Steam Squasher](#))
- Start [Bees](#) or IC2 Crops for renewable resources

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- Botania & Witchery

## Explosions, Part Two

On top of the concerns from LV machinery, the addition of MV power means keeping higher voltage lines away from low voltage cables and machines. Giving machines a higher voltage than they are rated for will make them explode. Putting MV power on a LV cable/wire will make it burn up, catch fire and potentially explode adjacent machines. To avoid a catastrophic failure by accidental over-voltage, separate LV and MV machinery rooms, use different cable sizes, and/or paint your cables.

Providing a lower voltage than a machine is rated for is safe. It may not be able to run all its recipes if it cannot be fed power fast enough, but there is no danger of fire or explosion. Many MV machine recipes can be run directly off LV power infrastructure with no issues, as they have very low EU/t requirements.

## Transformers

Transformers are used to convert EU between power tiers. To run LV machinery off MV power generation, a Transformer is necessary to convert the energy into LV voltage. One Amp of the higher tier will make four Amps of the next tier down in Step-Down mode, the default (1A MV -> 4A LV). In Inverted Step-Up mode, Transformers can take four lower voltage amps and output a single higher voltage amp (4A LV -> 1A MV). Keep in mind that in this mode the lower voltage sides become the Input, and the higher voltage side is therefore the Output. The single larger circle on a Transformer is always the side that connects to the higher voltage.



Transformer in default mode, transforming 1A HV to 4A MV. The single dotted sides are MV outputs while the HV input is the bigger, hollow + circle on the left

Hit the transformer with a Soft Mallet to switch between its two modes. "Machine Active" is Step-Down mode, "Machine Inactive" is Step-Up mode. Never change mode on a transformer that has power or it will explode. Always disconnect cables before switching modes on Transformers.

## Power Transformer

The Power Transformer works like an ordinary transformer with one exception. It will accept 4 amps of higher voltage and turn it into 16 amps of lower voltage in its default mode. In inverted mode it will transform 16amps lower voltage to 4 amps of higher voltage.


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