GT New Horizons

EV

Introduction

Extreme Voltage (abbreviated as **EV**) is the fourth electric tier. In this tier, several mechanics are introduced to you such as Applied Energistics 2 (abbreviated as AE2) and Nuclear Reactor. With the introduction of the Nuclear Reactor, you will have ability to produce large amount of energy using Nuclear Reactor depending on your power reactor design (See more in the Nuclear Reactor's sample chart). Other than the nuclear reactor, six new large engines are introduced as well. Finally, the AE2 is introduced to you to simplify your storage management as well as autocrafting. Note that most of the AE2 machines require titanium so be prepared to mass produce titanium if you want to use AE2.

Upon reaching EV, you should already have the ability to produce large quantities of titanium. When you can, you should upgrade your EBF(s) with TPV-Alloy coils, as they are necessary to smelt Tungstensteel, HSS-G, and the various alloys used in the GT++ multiblock machines you now have access to.

An important note to keep in mind when entering this tier is that this is the tier where most players get burnt out after reaching or facing hardship in this tier because of how difficult it is to get through in this tier. Unlike the transition between the HV and MV tiers, EV is a big jump from HV to EV, and EV demands a lot of resources and energy compared to the last two tiers. So be sure to build and prepare your automated systems (and mass-produce resources) if you haven't done so already because manual crafting has likely become a very taxing task in this tier. You will want to overproduce resources and essential components such as titanium, steel, motors, etc., to make it easier and save time for you to make something you need rather than go back to mining after finding out you don't have enough resources repeatedly. Lastly, if you don't want to get burnt out and want to continue playing, do not rush into EV and the rest of the future tiers. Take your time.

The Start / Early-EV

In order to progress further into EV as well as IV, you must somehow secure a steady supply of tungsten, which will be done by most players by building a T2 rocket and mining on Mars as well as its satellites. However, the player will need to initially obtain a few tungsten dust in order to use for creating the rocket, as well as some other important components which become available in this tier, including LuV circuits and Radon. The initial tungsten dust can be obtained by a few different means, but the best way listed in the quest book is to centrifuge Endstone Dust, which has a 37.5% chance of yielding a few Tungstate Dust-- this dust requires a few processing steps that notably includes an EV Autoclave. Endstone Dust can either be collected from mining in the End or the Yellow Stonelilly IC2 crop.

The EV Circuit Assembler infrastructure is also necessary to build, as 8 LuV circuits are required in

Your consumption of gold and silver will increase greatly in this tier, but both can be passively produced through various means such as IC2 crops.

Lastly, as stated above, TPV-Alloy coils are necessary to smelt Tungstensteel and HSS-G which are required for the T2 rocket. Platinum will likely be your bottleneck in crafting TPV-- you can either start on the platinum processing infrastructure (or platline), or just EBF the Platinum Metallic Powder for nuggets.

To briefly summarize the necessary EV machines built in this tier to create the T2 rocket: Autoclave, Chemical Reactor, Mixer, Circuit Assembler, Assembler.

On the other hand, setting up your AE2 network will *not* immediately require any tungsten, and is likely where the majority of your newfound Titanium will be dumped into. AE2 is a titanium-hungry mod-- an ME Interface, which is the building block of all autocrafting setups, requires an EV machine casing!

First Energy Crisis

You may find yourself struggling to power your new EV machines, as each machine will be consuming 4 (about 4.5 due to efficiency loss) times the amount of energy as the HV version of these machines. You should begin to setup a faster and more efficient setup for energy production. If you use oil, you should have fully automated Cetane-Boosted Diesel by now! For benzene, the Industrial Coke Oven becomes available-- this replacement for the Pyrolyse Oven can outpace 10 HV Distillation Towers. Nuclear Reactors are a new (and very competitive) power option too.

In addition, centralizing power becomes much better than decentralized power in this tier. Remember how the loss for a cable ranges between 1-3 EU-volt in every single tier? In LV, that meant that machines had to be basically adjacent to their generators. In EV, it means that you can have a generator producing 1A of EV several dozen cables away from a machine consuming 1920 EU/t and the machine will *still* only consume power from that generator.

On top of that, the efficiency of single block generators has done nothing but gone down. You can try to outproduce the efficiency loss (i.e., cope), but why bother when the multiblock power generators offer much better power efficiency now? The Large Combustion Engine and the Large Gas Turbine will inherently push you towards power centralization too, because wall sharing means that you can save resources by combining several generators together, and the pipes you may have been using to transport fuel can be immediately replaced with cabling instead.

Second Energy Crisis

You may have taken the advice above, and started building the new multiblock generators, but now you may realize that it is now possible to waste power because all of these multiblocks will constantly consume fuel while they are powered on, instead of only consuming fuel when a machine needs power. In addition, it is incredibly bad for efficiency to constantly turn on and off the multiblocks! The exceptions are the passively-cooled nuclear reactor, and the vacuum nuke. The former is incredibly

expensive for how little power it produces, and the latter is incredibly powerful, but has an important caveat: your automation must be completely perfect because a single mistake gives you a few seconds to correct before completely vaporizing your base.

Anyways, an energy storage multiblock becomes available in this tier! The Lapotronic Supercapacitor is **the** energy storage multiblock. Its throughput is only limited by the dynamo and energy hatches used. However, it is an expensive craft. The stopgap solution in the meantime can be the use of a battery buffer. To automate cycling your generators, use an energy detector cover in conjunction with a RS latch.

Mid-EV

To have reached this point is to have secured a large amount of tungstate and/or scheelite, and hopefully a processing line for tungsten!

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Side Quests

-Eliminate microcrafting and improve automation and QoL with AE2.

-Build advanced processing lines for Ilmenite and Bauxite.

-Make a Multiblock Miner for higher ore output.

-Make Various GT++ Multiblock versions of singleblocks such as the Bending Machine, Centrifuge, Lathe and Maceration Stack

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