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US President Barack Obama said Thursday that the Supreme Court did something "unusual" in freezing a plan to tackle carbon emissions, as he insisted his administration was on firm legal ground.

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The plan underpins the US emissions reduction commitments under a global climate deal agreed by 195 governments in Paris last December.

"I've heard people say, 'The Supreme Court struck down the clean power plant rule',' Obama told donors in California. "That's not true, so don't despair, people."

"This is a legal decision that says, 'Hold on until we review the legality.'"

Many Republican-controlled states opposed to Obama's plan had petitioned the Supreme Court to temporarily suspend its implementation until a final ruling is made.

Experts say that final ruling is not likely before 2017.

"We are very confident we are on strong legal footing here," Obama insisted.

Obama's administration had expected legal challenges but had been surprised that a stay was enacted on plans that will take many years to come into full effect.

"The Supreme Court did something unusual," Obama said referring to the ruling supported by five of the nine Supreme Court justices.

Obama's "Clean Power Plan" would require the power sector to cut carbon dioxide emissions by at least 32 percent compared to 2005 levels by the year 2030.

States that support efforts to curb climate change will still be able to press ahead with their plans.

Obama's Republican foes, who currently control Congress, insist there is no evidence of climate change, or that a human role in global warming is unclear.

Facing a Congressional roadblock, Obama has relied heavily on decades-old rules to force through regulation.

"There are going to be people constantly pushing back and making sure we keep clinging to old dirty fuels and a carbon-emitting economic strategy that we need to be moving away from," Obama said.