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Greece: Infrastructure

Affordable Infrastructure of Greece

In the past twelve years the economy of Greece has had many twists and turns, from it almost entirely collapsing to gradually beginning to pay off its debts and rebuild the economy. However despite its gradual economic recovery Greece faces another issue that started during the pandemic (Alogoskoufis). The first financial crisis in Greece was largely due to the Greek government spending more money than they had the budget for. This is a recurring problem in many countries where the upkeep of utilities and infrastructure cannot be paid off by their total exports.

Countries that excessively spend are usually faced with a choice, to either cut down their spending or to increase their income. There are many ways to increase income like increasing exports or raising taxes. However to cut spending Greece can modernize their main forms of infrastructure making it renewable. Infrastructure is the cornerstone of any country and by making it green Greece can protect themselves from overspending on old systems of infrastructure. Like a few other countries Greece has most of its infrastructure budget set on electricity, transportation, and waste management and there are green and sustainable options for all of them.

Most families in Greece follow the nuclear family archetype with close family often visiting. The majority of Greek citizens live above the poverty line with Greece having a poverty rate of 28.9% in 2021. Because of this most people in Greece have access to infrastructure like Waste management, transportation, and electricity.

Electricity is objectively one of if not the most important form of infrastructure. In 2020 most of Greece's electricity came from natural gas and renewable energy sources. Natural gas is the dominant form of energy production in most European countries. And much like other fossil fuel energy sources it is both reasonably cost effective but detrimental to the environment. Renewable energy sources on the other hand are in most cases half the cost of fossil fuel plants and require very little maintenance. While traditional renewables such as solar, wind, and most recently geothermal are staples of renewable energy and have worked well for almost 6 decades newer sources of energy such as hydrogen fuel cells hold immense potential in energy generation. Hydrogen fuel cells work similarly to traditional batteries but instead of using materials such as lithium to produce electricity hydrogen fuel cells as the name implies combine hydrogen and oxygen atoms to create electricity. While this technology has immense potential only a few countries have begun to use it consistently. Greek projects such as White Dragon and Green HiPo(*Advent Technologies*) have begun to work on creating efficient hydrogen fuel cells. In summary it will likely take Greece many years to transition to renewable energy and in the long run some money that would have been spent on upkeep could be saved.

Another important form of infrastructure is transportation. Geographically Greece is made of an interconnected mainland and a large number of smaller islands, because of this most of their transportation between the islands comes from ferries and other marine transportation. While ferries are relatively inexpensive to purchase they are decently expensive to maintain, however there are some alternatives to use of ferries. Recently there has been some venture into the field of electric ferries. A good example of electric ferry use is Norway(*The Explorer*), where electric ferries proved to both reduce carbon emissions as well as noise pollution. The only current downside to electric ferries is the cost, being a relatively new innovation they are more expensive than the traditional ferry. But as with all things the more electric ferries are produced the cheaper they will become. Another possible solution to the ferry issue is the use of causeways in between the smaller islands. Although expensive cosways are a very permanent solution as they usually require only a bit of maintenance and can last a very long time. As for the mainland highway infrastructure, Greece has a well functioning highway system that spans most of the country and plans to further increase its size.

Finally waste management. While Greece has bounced back in some departments it is a bit lackluster. One of said departments is waste management, in total Greece has paid over one million euros in fines over the course of the last six years. These fines have largely been due to their neglect of recycling and waste treatment. Greece has already begun to roll out laws to combat excessive waste as well as laws to mandate recycling. Although these laws are in place the lack of recycling enforcement has led to there still being an issue with waste. To solve this problem laws that enforce recycling via use of trash inspection should be implemented. As well as laws being put in place the spread of information about the benefits of recycling should be implemented to try to convince citizens to recycle. Recycling brings many benefits that could help to further develop Greece's infrastructure. For example a new use of recycled glass as road pavement which has been slightly experimented with in some parts of the world, could help to build the possible causeways to interconnect the islands. The correct treatment of bio waste could help to fuel bio energy endeavors that produce little byproduct and output a fair amount of energy.

Although these relatively new forms of infrastructure could be the best option to prevent another economic collapse they do come with their issues, the most obvious of which is the cost. While worthwhile, some long term green infrastructure has a rather steep starting cost. However there are ways that both a government and citizens can help. There are already a lot of countries that use green energy to account for over 50 percent of their total energy, there are also a fair amount of countries that don't. By getting more countries to use sustainable infrastructure such as green energy it will in turn lower the initial cost of sustainable energy. With more wind turbines, solar panels, hydroelectric dams, and other renewables the process of making them will become more efficient and cheaper lowering the start cost and making it viable for many countries. This is where citizens and governments can help. By working with other countries and their governments it could very well be possible to convince countries that use less renewable energy than traditional fossil fuels to adopt more forms of renewable energy. While getting more countries on board and lowering the cost of renewable energy could work, it is very likely more of a long term option. Unfortunately there are not a lot of short term solutions to improve the cost of sustainable infrastructure and those solutions that do work tie back into the idea of reducing spending in less necessary departments to save up for sustainable infrastructure.

While the initial price tag for green infrastructure is costly compared to older infrastructure, its long term benefits outweigh the initial cost. Green infrastructure has immense potential to cut the cost of constant infrastructure maintenance as well as making Greece more self-sufficient. With the present conflict in Europe many European countries have been cut off from resources such as natural gas which is a primary source of electricity in some countries. With green infrastructure (specifically energy) countries like Greece would not need to rely as heavily on other countries for resources. By staying relatively self sufficient Greece can keep itself going for long stretches at a time as well as cut down cost of imports on resources, and all it starts with green, sustainable infrastructure.

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